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COMPANY**

*Wholesalers*

Plumbing • HVAC • Pipe  
Valves • Fittings • Water Well  
and Industrial Supplies

#### To Our Customers:

The expanded Hazard Communications Standard promulgated by the Occupational Safety and Health Administration requires that manufacturers furnish Material Safety Data Sheets to distributors who, in turn, are obligated to transmit the Material Safety Data Sheets "downstream" to their customers. Goodin Company has requested Material Safety Data Sheets from all of the manufacturers from whom it purchases material. We believe we have now received copies of Material Safety Data Sheets from all manufacturers who believe their products fall within purview of this expanded regulation. To fulfill our responsibility of transmitting the Material Safety Data Sheets to downstream users, Goodin Company has elected to arrange them alphabetically and bind them together in one volume. We believe this will assist you in discharging your responsibility of properly educating your employees with respect to the hazards which may be present in the products you purchase from us.

As we add new products, or receive revised or updated Material Safety Data Sheets from manufacturers, they will be transmitted to our customers.

We should also point out that it is the responsibility of the manufacturer to make the decision with respect to whether a Material Safety Data Sheet is appropriate. All of the enclosed material represents Material safety Data Sheets received from the manufacturers. Goodin Company has merely, in compliance with its obligation under the expanded regulation, duplicated several thousand times over these MSDS's and are transmitting them to you. Goodin Company has neither amended, changed, designed or in any way altered, added to or deleted from the Material Safety Data Sheets as they have been received from the manufacturer.

**Goodin Company**



MATERIAL SAFETY 3M  
 DATA SHEET 3M Center  
 St. Paul, Minnesota  
 55144-1000  
 1-800-364-3577 or (651) 737-6501 (24 hours)

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DIVISION: ELECTRICAL PRODUCTS DIVISION

TRADE NAME:

SCOTCHRAP ALL WEATHER CORROSION PROTECTION TAPES 50 AND 51

ID NUMBER/U.P.C.:

80-0040-0024-8	-	-	-	80-0040-0025-5	-	-	-
80-0040-0026-3	-	-	-	80-0040-0032-1	-	-	-

ISSUED: February 27, 1997

SUPERSEDES: August 14, 1996

DOCUMENT: 06-1135-0

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 1. INGREDIENT C.A.S. NO. PERCENT  
 -----

POLYVINYL CHLORIDE FILM WITH RUBBER BASED ADHESIVE.....	None	100
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-----  
 2. PHYSICAL DATA  
 -----

BOILING POINT:..... N/A  
 VAPOR PRESSURE:..... N/A  
 VAPOR DENSITY:..... N/A  
 EVAPORATION RATE:..... N/A  
 SOLUBILITY IN WATER:..... N/A  
 SPECIFIC GRAVITY:..... > 1.0 Water=1  
 PERCENT VOLATILE:..... N/A  
 pH:..... N/A  
 VISCOSITY:..... N/A  
 MELTING POINT:..... N/D

APPEARANCE AND ODOR:

Solid, BLACK PLASTIC FILM WITH RUBBER ADHEISVE

-----  
 Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately  
 -----

-----  
3. FIRE AND EXPLOSION HAZARD DATA  
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FLASH POINT:..... N/A  
FLAMMABLE LIMITS - LEL:..... N/A  
FLAMMABLE LIMITS - UEL:..... N/A  
AUTOIGNITION TEMPERATURE:..... N/A

EXTINGUISHING MEDIA:

Carbon dioxide, Dry chemical, Foam

SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

No unusual fire or explosion hazards are anticipated.

NFPA HAZARD CODES: HEALTH: 0 FIRE: 0 REACTIVITY: 0  
UNUSUAL REACTION HAZARD: none

OSHA FIRE HAZARD CLASS: Not applicable

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4. REACTIVITY DATA  
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STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:

None known.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon Monoxide and Carbon Dioxide, Hydrogen Chloride, Formaldehyde.

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5. ENVIRONMENTAL INFORMATION  
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SPILL RESPONSE:

Not applicable.

RECOMMENDED DISPOSAL:

Dispose of waste product in a sanitary landfill.

ENVIRONMENTAL DATA:

Not applicable.

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Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately



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5. ENVIRONMENTAL INFORMATION (continued)  
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REGULATORY INFORMATION:

Volatile Organic Compounds: N/A.  
VOC Less H2O & Exempt Solvents: N/A.

Since regulations vary, consult applicable regulations or authorities  
before disposal.

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: No CHRONIC: No

-----  
6. SUGGESTED FIRST AID  
-----

EYE CONTACT:

No need for first aid is anticipated.

SKIN CONTACT:

No need for first aid is anticipated.

INHALATION:

No need for first aid is anticipated.

IF SWALLOWED:

No need for first aid is anticipated.

-----  
7. PRECAUTIONARY INFORMATION  
-----

EYE PROTECTION:

Not applicable.

SKIN PROTECTION:

Not applicable.

RECOMMENDED VENTILATION:

Not applicable.

RESPIRATORY PROTECTION:

Not applicable.

PREVENTION OF ACCIDENTAL INGESTION:

Do not ingest.

RECOMMENDED STORAGE:

Not applicable.

-----  
Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

-----  
7. PRECAUTIONARY INFORMATION (continued)  
-----

FIRE AND EXPLOSION AVOIDANCE:  
Not applicable.

OTHER PRECAUTIONARY INFORMATION:  
A Material Safety Data Sheet (MSDS) is not required by the OSHA Hazard Communication Standard (29 CFR 1910.1200) for this product. This MSDS is provided as a service to customers.

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
POLYVINYL CHLORIDE FILM WITH RUBBER BASED ADHESIVE.....	NONE	NONE	NONE	NONE	

\* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:  
- NONE: None Established

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8. HEALTH HAZARD DATA  
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EYE CONTACT:  
Eye contact is not expected to occur during normal use of the product.

SKIN CONTACT:  
No adverse health effects are expected from skin contact.

INHALATION:  
No adverse health effects are expected from inhalation exposure.

IF SWALLOWED:  
No adverse health effects are expected from swallowing.

OTHER HEALTH HAZARD INFORMATION:  
This product, when used under reasonable conditions or in accordance with the 3M directions for use, should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

-----  
Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

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SECTION CHANGE DATES  
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HEADING                      SECTION CHANGED SINCE August 14, 1996      ISSUE

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Abbreviations: N/D - Not Determined    N/A - Not Applicable    CA - Approximately  
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## Material Safety Data Sheet

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### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** SCOTCHRAP BRAND PIPE PRIMER  
**MANUFACTURER:** 3M  
**DIVISION:** Electrical Products Division

**ADDRESS:** 3M Center  
 St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

**Issue Date:** 10/20/2003  
**Supersedes Date:** 11/08/2001

**Document Group:** 06-4427-8

#### Product Use:

Intended Use: PIPE PRIME  
 Specific Use: SCOTCHRAP PIPE PRIMER

### SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
HEXANE, ALL ISOMERS	NONE	48 - 65
CALCIUM ZINC RESINATE	68334-35-0	10 - 15
ISOBUTYLENE-ISOPRENE POLYMER	9010-85-9	10 - 15
MIXED HEPTANES	Mixture	5 - 10
QUARTZ SILICA	14808-60-7	< 9
TOLUENE	108-88-3	4 - 6
NAPHTHA (PETROLEUM), SOLVENT-REFINED LIGHT	64741-84-0	4 - 6
ETHYL ALCOHOL	64-17-5	2 - 4
ZINC PHOSPHATE	7779-90-0	< 2
PIPERYLENE-2-METHYL-2-BUTENE POLYMER	26813-14-9	< 2
CARBON BLACK	1333-86-4	< 2
CYCLOHEXANE	110-82-7	< 1
METHYL ISOBUTYL KETONE	108-10-1	< 0.1
METHYL ALCOHOL	67-56-1	< 0.1
BENZENE	71-43-2	<= 0.0009504
ACETALDEHYDE	75-07-0	< 0.000024

### SECTION 3: HAZARDS IDENTIFICATION

### 3.1 EMERGENCY OVERVIEW

**Odor, Color, Grade:** Black-Solvent odor

**General Physical Form:** Liquid

**Immediate health, physical, and environmental hazards:** Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Flammable liquid and vapor. Extremely flammable liquid and vapor. May cause target organ effects. Contains a chemical or chemicals which can cause birth defects or other reproductive harm. Contains a chemical or chemicals which can cause cancer.

### 3.2 POTENTIAL HEALTH EFFECTS

**Eye Contact:**

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

**Skin Contact:**

Delayed Dermal Irritation: Signs/symptoms may include localized redness, swelling, itching, and pain. These effects may not appear immediately following exposure.

May be absorbed through skin and cause target organ effects.

**Inhalation:**

Upper Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

**Ingestion:**

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, nausea, diarrhea and vomiting.

Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal.

May be absorbed following ingestion and cause target organ effects.

**Target Organ Effects:**

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Peripheral Neuropathy: Signs/symptoms may include tingling or numbness of the extremities, incoordination, weakness of the hands and feet, tremors and muscle atrophy.

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Carcinogenicity:**

Contains a chemical or chemicals which can cause cancer.

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Class Description</u>	<u>Regulation</u>
ACETALDEHYDE	75-07-0	Group 2B	International Agency for Research on Cancer
ACETALDEHYDE	75-07-0	Anticipated human carcinogen	National Toxicology Program Carcinogens
ACETALDEHYDE	75-07-0	Group 2B	International Agency for Research on Cancer
ACETALDEHYDE	75-07-0	Anticipated human carcinogen	National Toxicology Program Carcinogens
BENZENE	71-43-2	Group 1	International Agency for Research on Cancer
BENZENE	71-43-2	Known human carcinogen	National Toxicology Program Carcinogens
BENZENE	71-43-2	Cancer hazard	OSHA Carcinogens
BENZENE	71-43-2	Group 1	International Agency for Research on Cancer

BENZENE	71-43-2	Known human carcinogen	National Toxicology Program Carcinogens
BENZENE	71-43-2	Cancer hazard	OSHA Carcinogens
CARBON BLACK	1333-86-4	Group 2B	International Agency for Research on Cancer
CARBON BLACK	1333-86-4	Group 2B	International Agency for Research on Cancer
CARBON BLACK EXTRACTS	NONE	Group 2B	International Agency for Research on Cancer
CERAMIC FIBERS (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	NONE	Group 2B	International Agency for Research on Cancer
CERAMIC FIBERS (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	NONE	Anticipated human carcinogen	National Toxicology Program Carcinogens
ETHYL ALCOHOL	64-17-5	Group 1	International Agency for Research on Cancer
ETHYL ALCOHOL	64-17-5	Group 1	International Agency for Research on Cancer
QUARTZ SILICA	14808-60-7	Group 1	International Agency for Research on Cancer
QUARTZ SILICA	14808-60-7	Known human carcinogen	National Toxicology Program Carcinogens
QUARTZ SILICA	14808-60-7	Group 1	International Agency for Research on Cancer
QUARTZ SILICA	14808-60-7	Known human carcinogen	National Toxicology Program Carcinogens
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	NONE	Group 1	International Agency for Research on Cancer
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	NONE	Known human carcinogen	National Toxicology Program Carcinogens

## SECTION 4: FIRST AID MEASURES

### 4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

**Eye Contact:** Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

**Skin Contact:** Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

**Inhalation:** Remove person to fresh air. If signs/symptoms develop, get medical attention.

**If Swallowed:** Do not induce vomiting. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

## SECTION 5: FIRE FIGHTING MEASURES

### 5.1 FLAMMABLE PROPERTIES

<b>Autoignition temperature</b>	<i>No Data Available</i>
<b>Flash Point</b>	-14 °F [ <i>Test Method:</i> Closed Cup] [ <i>Details:</i> MITS data]
<b>Flammable Limits - LEL</b>	<i>No Data Available</i>
<b>Flammable Limits - UEL</b>	<i>No Data Available</i>
<b>OSHA Flammability Classification:</b>	Not Determined

### 5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

### 5.3 PROTECTION OF FIRE FIGHTERS

**Special Fire Fighting Procedures:** Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

**Unusual Fire and Explosion Hazards:** Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Not applicable. Flammable liquid and vapor. Extremely flammable liquid and vapor.

**Note:** See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Accidental Release Measures:** Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate organic solvent. Read and follow safety precautions on the solvent label and MSDS. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

**In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.**

## SECTION 7: HANDLING AND STORAGE

### 7.1 HANDLING

Avoid eye contact with vapors, mists, or spray. Avoid breathing of vapors, mists or spray. Do not eat, drink or smoke when using this



product. Wash exposed areas thoroughly with soap and water. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. Avoid static discharge. Contents may be under pressure, open carefully. For industrial or professional use only. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. No smoking while handling this material. Avoid contact with oxidizing agents.

**7.2 STORAGE**

Keep container tightly closed. Store away from acids. Store away from heat. Store out of direct sunlight. Store away from oxidizing agents. Keep container in well-ventilated area.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 ENGINEERING CONTROLS**

Use with appropriate local exhaust ventilation. Provide appropriate local exhaust ventilation on open containers. Provide local exhaust ventilation at transfer points. Use in an enclosed process area is recommended. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

**8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**8.2.1 Eye/Face Protection**

Avoid eye contact. Avoid eye contact with vapors, mists, or spray. The following eye protection(s) are recommended: Indirect Vented Goggles.

**8.2.2 Skin Protection**

Avoid skin contact. Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

**8.2.3 Respiratory Protection**

Avoid breathing of vapors, mists or spray. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with organic vapor cartridges. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

**8.2.4 Prevention of Swallowing**

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

**8.3 EXPOSURE GUIDELINES**

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
ACETALDEHYDE	ACGIH	CEIL	25 ppm	Table A3
ACETALDEHYDE	ACGIH	CEIL	25 ppm	Table A3
ACETALDEHYDE	OSHA	TWA, Vacated	100 ppm	
ACETALDEHYDE	OSHA	TWA, Vacated	100 ppm	
ACETALDEHYDE	OSHA	STEL, Vacated	150 ppm	
ACETALDEHYDE	OSHA	STEL, Vacated	150 ppm	
ACETALDEHYDE	OSHA	TWA	200 ppm	Table Z-1
ACETALDEHYDE	OSHA	TWA	200 ppm	Table Z-1
ACETONE	ACGIH	TWA	500 ppm	Table A4
ACETONE	ACGIH	STEL	750 ppm	Table A4
ACETONE	OSHA	TWA, Vacated	750 ppm	
ACETONE	OSHA	TWA	1000 ppm	Table Z-1

ACETONE	OSHA	STEL, Vacated	1000 ppm	
BENZENE	ACGIH	TWA	0.5 ppm	Skin Notation*; Table A1
BENZENE	ACGIH	TWA	0.5 ppm	Skin Notation*; Table A1
BENZENE	ACGIH	STEL	2.5 ppm	Skin Notation*; Table A1
BENZENE	ACGIH	STEL	2.5 ppm	Skin Notation*; Table A1
BENZENE	OSHA	TWA	1 ppm	Standard Appendix
BENZENE	OSHA	TWA	1 ppm	Standard Appendix
BENZENE	OSHA	STEL	5 ppm	Standard Appendix
BENZENE	OSHA	STEL	5 ppm	Standard Appendix
CARBON BLACK	ACGIH	TWA	3.5 mg/m3	Table A4
CARBON BLACK	ACGIH	TWA	3.5 mg/m3	Table A4
CARBON BLACK	CMRG	TWA	0.5 mg/m3	
CARBON BLACK	CMRG	TWA	0.5 mg/m3	
CARBON BLACK	OSHA	TWA	3.5 mg/m3	Table Z-1
CARBON BLACK	OSHA	TWA	3.5 mg/m3	Table Z-1
CERAMIC FIBERS (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	ACGIH	TWA - specific form	0.2 fiber/cc	as fibers >= 5 um; Table A2
CYCLOHEXANE	ACGIH	TWA	100 ppm	
CYCLOHEXANE	ACGIH	TWA	100 ppm	
CYCLOHEXANE	OSHA	TWA	300 ppm	Table Z-1
CYCLOHEXANE	OSHA	TWA	300 ppm	Table Z-1
ETHYL ACETATE	ACGIH	TWA	400 ppm	
ETHYL ACETATE	OSHA	TWA	400 ppm	Table Z-1
ETHYL ALCOHOL	ACGIH	TWA	1000 ppm	Table A4
ETHYL ALCOHOL	ACGIH	TWA	1000 ppm	Table A4
ETHYL ALCOHOL	OSHA	TWA	1000 ppm	Table Z-1
ETHYL ALCOHOL	OSHA	TWA	1000 ppm	Table Z-1
HEPTANE	ACGIH	TWA	400 ppm	
HEPTANE	ACGIH	STEL	500 ppm	
HEPTANE	OSHA	TWA, Vacated	400 ppm	
HEPTANE	OSHA	TWA	500 ppm	Table Z-1
HEPTANE	OSHA	STEL, Vacated	500 ppm	
HEXANE	ACGIH	TWA	50 ppm	Skin Notation*
HEXANE	OSHA	TWA, Vacated	50 ppm	Table Z-1A
HEXANE	OSHA	TWA	500 ppm	Table Z-1A
METHYL ALCOHOL	ACGIH	TWA	200 ppm	Skin Notation*
METHYL ALCOHOL	ACGIH	TWA	200 ppm	Skin Notation*
METHYL ALCOHOL	ACGIH	STEL	250 ppm	Skin Notation*
METHYL ALCOHOL	ACGIH	STEL	250 ppm	Skin Notation*
METHYL ALCOHOL	OSHA	TWA	200 ppm	Skin Notation*; Table Z-1A
METHYL ALCOHOL	OSHA	TWA	200 ppm	Skin Notation*; Table Z-1A
METHYL ALCOHOL	OSHA	STEL	250 ppm	Skin Notation*; Table Z-1A
METHYL ALCOHOL	OSHA	STEL	250 ppm	Skin Notation*; Table Z-1A
METHYL ISOBUTYL KETONE	ACGIH	TWA	50 ppm	
METHYL ISOBUTYL KETONE	ACGIH	TWA	50 ppm	
METHYL ISOBUTYL KETONE	ACGIH	STEL	75 ppm	
METHYL ISOBUTYL KETONE	ACGIH	STEL	75 ppm	
METHYL ISOBUTYL KETONE	OSHA	TWA, Vacated	50 ppm	
METHYL ISOBUTYL KETONE	OSHA	TWA, Vacated	50 ppm	
METHYL ISOBUTYL KETONE	OSHA	STEL, Vacated	75 ppm	
METHYL ISOBUTYL KETONE	OSHA	STEL, Vacated	75 ppm	
METHYL ISOBUTYL KETONE	OSHA	TWA	100 ppm	Table Z-1

METHYL ISOBUTYL KETONE	OSHA	TWA	100 ppm	Table Z-1
MICA-GROUP MINERALS	ACGIH	TWA - respirable	3 mg/m3	
MICA-GROUP MINERALS	OSHA	TWA - respirable	3 mg/m3	Table Z-1A
QUARTZ SILICA	ACGIH	TWA - respirable	0.05 mg/m3	Table A2
QUARTZ SILICA	ACGIH	TWA - respirable	0.05 mg/m3	Table A2
QUARTZ SILICA	OSHA	TWA - respirable	0.1 mg/m3	Table Z-1A
QUARTZ SILICA	OSHA	TWA - respirable	0.1 mg/m3	Table Z-1A
TOLUENE	ACGIH	TWA	50 ppm	Skin Notation*; Table A4
TOLUENE	ACGIH	TWA	50 ppm	Skin Notation*; Table A4
TOLUENE	CMRG	STEL	75 ppm	Skin Notation*
TOLUENE	CMRG	STEL	75 ppm	Skin Notation*
TOLUENE	OSHA	TWA, Vacated	100 ppm	
TOLUENE	OSHA	TWA, Vacated	100 ppm	
TOLUENE	OSHA	STEL, Vacated	150 ppm	
TOLUENE	OSHA	STEL, Vacated	150 ppm	
TOLUENE	OSHA	TWA	200 ppm	Table Z-2
TOLUENE	OSHA	TWA	200 ppm	Table Z-2
TOLUENE	OSHA	CEIL	300 ppm	Table Z-2
TOLUENE	OSHA	CEIL	300 ppm	Table Z-2

\* Substance(s) refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

VAC Vacated PEL: Vacated Permissible Exposure Limits [PEL] are enforced as the OSHA PEL in some states. Check with your local regulatory agency.

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- CMRG: Chemical Manufacturer Recommended Guideline
- OSHA: Occupational Safety and Health Administration
- AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Odor, Color, Grade:</b>	Black-Solvent odor
<b>General Physical Form:</b>	Liquid
<b>Autoignition temperature</b>	No Data Available
<b>Flash Point</b>	-14 °F [Test Method: Closed Cup] [Details: MITS data]
<b>Flammable Limits - LEL</b>	No Data Available
<b>Flammable Limits - UEL</b>	No Data Available
<b>Boiling point</b>	>=95 °F [Details: MITS data]
<b>Vapor Density</b>	No Data Available
<b>Vapor Pressure</b>	<=27 psia [@ 131.0000000000 °F] [Details: MITS data]
<b>Specific Gravity</b>	0.83 [Details: MITS data]
<b>pH</b>	Not Applicable
<b>Melting point</b>	No Data Available
<b>Evaporation rate</b>	No Data Available
<b>Volatile Organic Compounds</b>	No Data Available

VOC Less H2O &amp; Exempt Solvents

478 g/l [*Test Method:* South Cost Air Qual Mgmt Dist]

Viscosity

300 centipoise [*@ 73.400000000 °F*] [*Details:* MITS data]**SECTION 10: STABILITY AND REACTIVITY****Stability:** Stable.**Materials and Conditions to Avoid:** Heat; Sparks and/or flames; Strong oxidizing agents; Temperatures above the boiling point**Hazardous Polymerization:** Hazardous polymerization will not occur.**Hazardous Decomposition or By-Products****Substance**Aldehydes  
Carbon monoxide  
Carbon dioxide**Condition**Oxidative Degradation  
Oxidation, heat or reaction  
Oxidative Degradation**SECTION 11: TOXICOLOGICAL INFORMATION**

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

**SECTION 12: ECOLOGICAL INFORMATION****ECOTOXICOLOGICAL INFORMATION**

Not determined.

**CHEMICAL FATE INFORMATION**

Not determined.

**SECTION 13: DISPOSAL CONSIDERATIONS****Waste Disposal Method:** Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.**EPA Hazardous Waste Number (RCRA):** D001 (Ignitable)

Since regulations vary, consult applicable regulations or authorities before disposal.

**SECTION 14: TRANSPORT INFORMATION****ID Number(s):**

80-6107-3581-5, 80-6108-3280-2, 80-6109-2573-9

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

**SECTION 15: REGULATORY INFORMATION****US FEDERAL REGULATIONS**

Contact 3M for more information.

**311/312 Hazard Categories:**

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

**Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):**

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
TOLUENE	108-88-3	4 - 6
CALCIUM ZINC RESINATE (ZINC COMPOUNDS)	68334-35-0	10 - 15
CYCLOHEXANE	110-82-7	< 1
ZINC PHOSPHATE (ZINC COMPOUNDS)	7779-90-0	< 2

**This material contains a chemical which requires export notification under TSCA Section 12[b]:**

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
METHYL ISOBUTYL KETONE	108-10-1	Toxic Substances Control Act (TSCA) 4 Test Rule Chemicals	Applicable
CYCLOHEXANE	110-82-7	Toxic Substances Control Act (TSCA) 4 Test Rule Chemicals	Applicable

**STATE REGULATIONS**

Contact 3M for more information.

**CALIFORNIA PROPOSITION 65**

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
ACETALDEHYDE	75-07-0	**Carcinogen
ACETALDEHYDE	75-07-0	**Carcinogen
BENZENE	71-43-2	*Male reproductive toxin
BENZENE	71-43-2	*Male reproductive toxin
BENZENE	71-43-2	**Carcinogen
BENZENE	71-43-2	**Carcinogen
BENZENE	71-43-2	*Developmental Toxin
BENZENE	71-43-2	*Developmental Toxin
CARBON BLACK	1333-86-4	**Carcinogen
CARBON BLACK	1333-86-4	**Carcinogen
CARBON BLACK EXTRACTS	NONE	**Carcinogen
CERAMIC FIBERS (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	NONE	**Carcinogen
SCOTCHRAP BRAND PIPE PRIMER	NONE	**Carcinogen
SCOTCHRAP BRAND PIPE PRIMER	NONE	*Developmental Toxin
SILICA, CRYSTALLINE (AIRBORNE PARTICLES OF RESPIRABLE SIZE)	NONE	**Carcinogen
TOLUENE	108-88-3	*Developmental Toxin

\* WARNING: contains a chemical or chemicals which can cause birth defects or other reproductive harm.

\*\* WARNING: contains a chemical which can cause cancer.

**CHEMICAL INVENTORIES**

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS),

or are exempt polymers whose monomers are listed on EINECS.

The components of this product are in compliance with the chemical notification requirements of TSCA.

The components of this product are listed on the Australian Inventory of Chemical Substances.

All the components of this product are listed on China's Inventory of Chemical Substances.

The components of this product are in compliance with notification requirements in the Philippines.

Contact 3M for more information.

## INTERNATIONAL REGULATIONS

Contact 3M for more information.

## US LABEL INFORMATION

**WARNING!** Extremely flammable. May be harmful if swallowed. Irritating to eyes, respiratory system and skin. May be absorbed through the skin. Can cause central nervous system depression. Contains a chemical which can cause birth defects and reproductive harm.

**PRECAUTIONS:** See MSDS for suggested first aid and precautions.

**This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.**

## SECTION 16: OTHER INFORMATION

### NFPA Hazard Classification

**Health:** 2 **Flammability:** 4 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

No revision information is available.

**DISCLAIMER:** The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

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# MSDS Document

## Product CASTABLE REFRACTORY

### 1. Chemical Product and Company Identification

**Trade Name of this Product** CASTABLE REFRACTORY

**Synonyms:** KS-4 CASTABLE REFRACTORY

**MSDS ID** MSDS00206

**Manufacturer**

A.P. GREEN REFRACTORIES CO.  
GREEN BLVD  
MEXICO, MO 65265-2582

**Phone Number**

(314) 473-3626

**Emergency Phone**

(314) 473-3626

**Revision Date** 03/03/1988

### 2. Composition and Information on Ingredients

Ingredient	CAS Number	Weight %	ACGIH TLV	PEL	STEL
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### 3. Hazard Identification

Route Of Entry Inds - Inhalation: YES Skin: YES Ingestion: NO

Carcinogenicity Inds - NTP: NO IARC: NO OSHA: NO

Health Hazards Acute And Chronic: ACUTE: EYE:DUST CAN IRRITATE EYES. PRODUCT'S CEMENT CAN CAUSE EYE INJURY. SKIN:PRODUCT'S CEMENT CAN CAUSE SKIN IRRITATION. INHALATION:DUST GENERATED CAN CAUSE BREATHING DISCOMFORT. CHRONIC:LUNG DAMAGE.

Explanation of Carcinogenicity: NONE OF THE CHEMICALS IN THIS PRODUCT IS LISTED BY IARC, NTP OR OSHA AS A CARCINOGEN.

Signs and Symptoms of Overexposure: EYE, SKIN & RESPIRATORY TRACT IRRITATION.

Medical Conditions Aggravated by Overexposure: PERSONS WITH A HISTORY OF SKIN AND RESPIRATORY DISORDERS MAY BE AT INCREASED RISK FROM EXPOSURE.

### 4. First Aid Information

EYES:PROMPTLY FLUSH EYES WITH WATER FOR 15 MINUTES, LIFTING EYE LIDS. GET MEDICAL ATTENTION. SKIN:REMOVE CONTAMINATED CLOTHING & WASH SKIN WITH WATER. GET MEDICAL ATTENTION IF IRRITATION PERSISTS. INHALATION:MOVE VICTIM PROMPTLY TO FRESH AI R. GIVE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION. INGESTION: DO NOT INDUCE VOMITING. GIVE NOTHING BY MOUTH IF UNCONSCIOUS. GET MEDICAL ATTENTION.

### 5. Fire Fighting Measures

**Flash Point** KEEP MATERIAL DRY U

Flash Point Text: NONE  
Auto Ignition Temperature Text:  
Lower Limits: N/R Upper Limits: N/R  
Extinguishing Media: NOT APPLICABLE  
Fire Fighting Procedures: NOT APPLICABLE  
Unusal Fire/Explosion Hazard: NOT APPLICABLE

## 6. Accidental Release Measures

Spill Release Procedures: WEAR DUST MASK. VACUUM UP DRY POWDER, OR DAMPEN DRY MATERIAL AND SWEEP OR SHOVEL UP. IF WET (AFTER MIXING WITH WATER FOR USE), SWEEP OR SHOVEL UP.  
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.  
Waste Disposal Methods: DISPOSE OF IN AN APPROVED LANDFILL, IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

## 7. Handling and Storage

KEEP MATERIAL DRY UNTIL USE.

## 8. Exposure Controls and Personal Protection

Respiratory Protection: USE NIOSH APPROVED RESPIRATOR SUITABLE FOR DUST WHEN WORKING AROUND DRIED MATERIAL OR WHEN REMOVING THIS PRODUCT AFTER SERVICE.  
Ventilation: MECHANICAL (GENERAL) VENTILATION IS USUALLY ADEQUATE.  
Protective Gloves: WORK GLOVES  
Eye Protection: SAFETY GLASSES OR GOGGLES  
Other Equipment: INDUSTRIAL LONG SLEEVED AND LONG LEGGED WORK CLOTHING. SAFETY SHOES SHOULD BE WORN TO PREVENT FOOT INJURY.  
Work Hygenic Practices: INDUSTRIAL LONG SLEEVED AND LONG LEGGED WORK CLOTHING. SAFETY SHOES SHOULD BE WORN TO PREVENT FOOT INJURY.  
Supplemental Safety & Health: NONE SPECIFIED BY MANUFACTURER.

## 9. Physical and Chemical Properties

HCC: N1  
Boiling Point:  
N/R  
Melting/Freezing Point:  
N/R  
Decomposition Temp:  
UNKNOWN  
Vapor Pressure: N/R Vapor Density: N/R  
Specific Gravity: 2.7  
PH: N/R  
Viscosity: N/R  
Evaporation Rate & Reference: NOT APPLICABLE  
Solubility in Water: SLIGHT  
Appearance and Odor: GRAY, GRANULAR MIXTURE; NO ODOR  
Percent Volatiles by Volume: 0

Corrosion Rate: N/R

## **10. Stability and Reactivity**

Stability Indicator: YES

Stability Conditions to Avoid: NONE SPECIFIED BY MANUFACTURER.

Materials to Avoid: NONE SPECIFIED BY MANUFACTURER.

Hazardous Decomposition Products: NONE

Hazardous Polymerization Products: NO

Conditions to Avoid Polymerization: NOT APPLICABLE

## **11. Toxicological Information**

N/P

## **12. Ecological Information**

N/P

## **13. Disposal Considerations**

DISPOSE OF IN AN APPROVED LANDFILL, IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

## **14. Transportation Information**

N/P

## **15. Regulatory Information**

SARA Title III: N/P

Federal Regulatory: N/P

## **16. Other Information**



**MATERIAL SAFETY DATA SHEET****Product Trade Name:** **AQUA-CLEAR® PFD****Revision Date:** 02-Jun-2007**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Trade Name:** AQUA-CLEAR® PFD  
**Synonyms:** None  
**Chemical Family:** Blend  
**Application:** Surfactant

**Manufacturer/Supplier:** Baroid Fluid Services  
Product Service Line of Halliburton  
P.O. Box 1675  
Houston, TX 77251  
Telephone: (281) 871-4000  
Emergency Telephone: (281) 575-5000

**Prepared By:** Chemical Compliance  
Telephone: 1-580-251-4335  
e-mail: fdunexchem@halliburton.com

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Anionic polyacrylamide		30 - 60%	Not applicable	Not applicable

**3. HAZARDS IDENTIFICATION**

**Hazard Overview:** May cause eye, skin, and respiratory irritation.

**4. FIRST AID MEASURES**

**Inhalation:** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin:** Wash with soap and water. Get medical attention if irritation persists.

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion:** Under normal conditions, first aid procedures are not required.

**Notes to Physician:** Not Applicable

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Min: > 212
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Min: > 100
Autoignition Temperature (C):	COC
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**NFPA Ratings:** Health 1, Flammability 1, Reactivity 0

**HMS Ratings:** Flammability 1, Reactivity 0, Health 1

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Spills of this product are very slippery.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing.

**Storage Information** Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 36 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area.

**Respiratory Protection** Not normally necessary.

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Safety glasses.

**Other Precautions** None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Yellowish
Odor:	Ammonia
pH:	6.5-7.5
Specific Gravity @ 20 C (Water=1):	1.3

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Density @ 20 C (lbs./gallon):	10.84
Bulk Density @ 20 C (lbs/ft3):	81.16
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	50
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

## 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation.
Skin Contact	Prolonged or repeated contact may cause slight skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Swallowing a relatively large amount of this material is unlikely to produce serious illness or death.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: > 10000 mg/kg (Rat)
Dermal Toxicity:	LD50: > 10000 mg/kg (Rabbit)
Inhalation Toxicity:	Not determined

**Primary Irritation Effect:** Not determined  
**Carcinogenicity** Not determined  
**Genotoxicity:** Not determined  
**Reproductive / Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined  
**Persistence/Degradability** Biodegradable  
**Bio-accumulation** Not Determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined  
**Acute Crustaceans Toxicity:** Not determined  
**Acute Algae Toxicity:** EC50: > 1000 mg/l (Skeletonema costatum)

**Chemical Fate Information** Not determined  
**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.  
**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**DOT**  
Not restricted

**Canadian TDG**  
Not restricted

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

### Other Shipping Information

**Labels:** None



## 15. REGULATORY INFORMATION

### US Regulations

<b>US TSCA Inventory</b>	All components listed on inventory.
<b>EPA SARA Title III Extremely Hazardous Substances</b>	Not applicable
<b>EPA SARA (311,312) Hazard Class</b>	None
<b>EPA SARA (313) Chemicals</b>	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
<b>EPA CERCLA/Superfund Reportable Spill Quantity</b>	Not applicable.
<b>EPA RCRA Hazardous Waste Classification</b>	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
<b>California Proposition 65</b>	The California Proposition 65 regulations apply to this product.
<b>MA Right-to-Know Law</b>	One or more components listed.
<b>NJ Right-to-Know Law</b>	One or more components listed.
<b>PA Right-to-Know Law</b>	One or more components listed.

### Canadian Regulations

<b>Canadian DSL Inventory</b>	All components listed on inventory.
<b>WHMIS Hazard Class</b>	Un-Controlled

## 16. OTHER INFORMATION

### The following sections have been revised since the last issue of this MSDS

Not applicable

**Additional Information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

### Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

\*\*\*END OF MSDS\*\*\*



**MATERIAL SAFETY DATA SHEET****Product Trade Name:**        **AQUAGEL® GOLD SEAL****Revision Date:**                02-Jan-2007**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Trade Name:**        AQUAGEL® GOLD SEAL  
**Synonyms:**                    None  
**Chemical Family:**            Mineral  
**Application:**                 Viscosifier

**Manufacturer/Supplier**        Baroid Drilling Fluids  
   a Product Service Line of Halliburton Energy Services, Inc.  
   P.O. Box 1675  
   Houston, TX 77251  
   Telephone: (281) 871-4000  
   Emergency Telephone: (281) 575-5000

**Prepared By**                    Chemical Compliance  
   Telephone: 1-580-251-4335

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>SUBSTANCE</b>	<b>CAS Number</b>	<b>PERCENT</b>	<b>ACGIH TLV-TWA</b>	<b>OSHA PEL-TWA</b>
Crystalline silica, cristobalite	14464-46-1	0 - 1%	0.025 mg/m <sup>3</sup>	1/2 x 10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Crystalline silica, tridymite	15468-32-3	0 - 1%	0.05 mg/m <sup>3</sup>	1/2 x 10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Crystalline silica, quartz	14808-60-7	1 - 5%	0.025 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Bentonite	1302-78-9	60 - 100%	Not applicable	Not applicable

More restrictive exposure limits may be enforced by some states, agencies, or other authorities.

**3. HAZARDS IDENTIFICATION**

### 3. HAZARDS IDENTIFICATION

#### Hazard Overview

**CAUTION! - ACUTE HEALTH HAZARD**

May cause eye and respiratory irritation.

**DANGER! - CHRONIC HEALTH HAZARD**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

### 4. FIRST AID MEASURES

**Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin**

Wash with soap and water. Get medical attention if irritation persists.

**Eyes**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion**

Under normal conditions, first aid procedures are not required.

**Notes to Physician**

Treat symptomatically.

### 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):

Not Determined

Flash Point/Range (C):

Not Determined

Flash Point Method:

Not Determined

Autoignition Temperature (F):

Not Determined

Autoignition Temperature (C):

Not Determined

Flammability Limits in Air - Lower (%):

Not Determined

Flammability Limits in Air - Upper (%):

Not Determined

**Fire Extinguishing Media**

All standard firefighting media.

**Special Exposure Hazards**

Not applicable.

**Special Protective Equipment for Fire-Fighters**

Not applicable.

**NFPA Ratings:**

Health 0, Flammability 0, Reactivity 0

**HMS Ratings:**

Flammability 0, Reactivity 0, Health 0\*

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures**

None known.

**Procedure for Cleaning / Absorption**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. HANDLING AND STORAGE

<b>Handling Precautions</b>	This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.
<b>Storage Information</b>	Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Product has a shelf life of 12 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Engineering Controls</b>	Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.
<b>Respiratory Protection</b>	Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.
<b>Hand Protection</b>	Normal work gloves.
<b>Skin Protection</b>	Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.
<b>Eye Protection</b>	Wear safety glasses or goggles to protect against exposure.
<b>Other Precautions</b>	None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Powder
<b>Color:</b>	Tan
<b>Odor:</b>	Mild earthy
<b>pH:</b>	8-10
<b>Specific Gravity @ 20 C (Water=1):</b>	2.6
<b>Density @ 20 C (lbs./gallon):</b>	Not Determined
<b>Bulk Density @ 20 C (lbs/ft3):</b>	50- 73
<b>Boiling Point/Range (F):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (F):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Insoluble
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (lbs./gallon):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	Not Determined
<b>Viscosity, Kinematic @ 20 C (centistrokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	Not Determined
<b>Molecular Weight (g/mole):</b>	Not Determined

## 10. STABILITY AND REACTIVITY

<b>Stability Data:</b>	Stable
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Conditions to Avoid</b>	None anticipated
<b>Incompatibility (Materials to Avoid)</b>	Hydrofluoric acid.
<b>Hazardous Decomposition Products</b>	Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).
<b>Additional Guidelines</b>	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

<b>Principle Route of Exposure</b>	Eye or skin contact, inhalation.
<b>Inhalation</b>	<p>Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).</p> <p>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).</p>
<b>Skin Contact</b>	May cause mechanical skin irritation.
<b>Eye Contact</b>	May cause eye irritation.
<b>Ingestion</b>	None known
<b>Aggravated Medical Conditions</b>	Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

**Chronic Effects/Carcinogenicity** Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Other Information** For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

#### **Toxicity Tests**

<b>Oral Toxicity:</b>	Not determined
<b>Dermal Toxicity:</b>	Not determined
<b>Inhalation Toxicity:</b>	Not determined
<b>Primary Irritation Effect:</b>	Not determined
<b>Carcinogenicity</b>	Refer to <u>IARC Monograph 68, Silica, Some Silicates and Organic Fibres</u> (June 1997).
<b>Genotoxicity:</b>	Not determined
<b>Reproductive / Developmental Toxicity:</b>	Not determined

## **12. ECOLOGICAL INFORMATION**

<b>Mobility (Water/Soil/Air)</b>	Not determined
<b>Persistence/Degradability</b>	Not determined
<b>Bio-accumulation</b>	Not Determined

#### **Ecotoxicological Information**

<b>Acute Fish Toxicity:</b>	Not determined
<b>Acute Crustaceans Toxicity:</b>	Not determined
<b>Acute Algae Toxicity:</b>	Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

### 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

### 14. TRANSPORT INFORMATION

#### Land Transportation

**DOT**  
Not restricted

**Canadian TDG**  
Not restricted

**ADR** Not restricted

#### Air Transportation

**ICAO/IATA** Not restricted

#### Sea Transportation

**IMDG** Not restricted

#### Other Shipping Information

**Labels:** None

### 15. REGULATORY INFORMATION

#### US Regulations

**US TSCA Inventory** All components listed on inventory.

**EPA SARA Title III Extremely Hazardous Substances** Not applicable

**EPA SARA (311,312) Hazard Class** Acute Health Hazard  
Chronic Health Hazard

**EPA SARA (313) Chemicals** This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

**EPA CERCLA/Superfund Reportable Spill Quantity For This Product** Not applicable.

**EPA RCRA Hazardous Waste Classification** If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**California Proposition 65** The California Proposition 65 regulations apply to this product.



<b>MA Right-to-Know Law</b>	One or more components listed.
<b>NJ Right-to-Know Law</b>	One or more components listed.
<b>PA Right-to-Know Law</b>	One or more components listed.
<b>Canadian Regulations</b>	
<b>Canadian DSL Inventory</b>	All components listed on inventory.
<b>WHMIS Hazard Class</b>	D2A Very Toxic Materials Crystalline silica

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**

Not applicable

**Additional Information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***



**MATERIAL SAFETY DATA SHEET****Product Trade Name:** BENSEAL®**Revision Date:** 03-Jan-2008**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Product Trade Name:** BENSEAL®**Synonyms:** None**Chemical Family:** Mineral**Application:** Viscosifier**Manufacturer/Supplier** Baroid Fluid Services  
Product Service Line of Halliburton  
P.O. Box 1675  
Houston, TX 77251  
Telephone: (281) 871-4000  
Emergency Telephone: (281) 575-5000**Prepared By** Chemical Compliance  
Telephone: 1-580-251-4335  
e-mail: fdunexchem@halliburton.com**2. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>SUBSTANCE</b>	<b>CAS Number</b>	<b>PERCENT</b>	<b>ACGIH TLV-TWA</b>	<b>OSHA PEL-TWA</b>
Crystalline silica, cristobalite	14464-46-1	0 - 1%	0.025 mg/m <sup>3</sup>	1/2 x 10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Crystalline silica, tridymite	15468-32-3	0 - 1%	0.05 mg/m <sup>3</sup>	1/2 x 10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Crystalline silica, quartz	14808-60-7	1 - 5%	0.025 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Bentonite	1302-78-9	60 - 100%	Not applicable	Not applicable

**More restrictive exposure limits may be enforced by some states, agencies, or other authorities.**

### 3. HAZARDS IDENTIFICATION

#### Hazard Overview

**CAUTION! - ACUTE HEALTH HAZARD**

May cause eye and respiratory irritation.

**DANGER! - CHRONIC HEALTH HAZARD**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

### 4. FIRST AID MEASURES

#### Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

#### Skin

Wash with soap and water. Get medical attention if irritation persists.

#### Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

#### Ingestion

Under normal conditions, first aid procedures are not required.

#### Notes to Physician

Treat symptomatically.

### 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

**Fire Extinguishing Media** All standard firefighting media.

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Not applicable.

**NFPA Ratings:** Health 0, Flammability 0, Reactivity 0  
**HMS Ratings:** Flammability 0, Reactivity 0, Health 0\*

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** None known.

**Procedure for Cleaning / Absorption**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

**7. HANDLING AND STORAGE**

**Handling Precautions**

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Storage Information**

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Product has a shelf life of 60 months.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls**

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

**Respiratory Protection**

Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.

**Hand Protection**

Normal work gloves.

**Skin Protection**

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection**

Wear safety glasses or goggles to protect against exposure.

**Other Precautions**

None known.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Solid
<b>Color:</b>	Various
<b>Odor:</b>	Mild earthy
<b>pH:</b>	8-10
<b>Specific Gravity @ 20 C (Water=1):</b>	2.6
<b>Density @ 20 C (lbs./gallon):</b>	62
<b>Bulk Density @ 20 C (lbs/ft3):</b>	63- 73
<b>Boiling Point/Range (F):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (F):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Insoluble
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (lbs./gallon):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	Not Determined
<b>Viscosity, Kinematic @ 20 C (centistokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	Not Determined
<b>Molecular Weight (g/mole):</b>	Not Determined

## 10. STABILITY AND REACTIVITY

<b>Stability Data:</b>	Stable
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Conditions to Avoid</b>	None anticipated
<b>Incompatibility (Materials to Avoid)</b>	Hydrofluoric acid.
<b>Hazardous Decomposition Products</b>	Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).
<b>Additional Guidelines</b>	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

<b>Principle Route of Exposure</b>	Eye or skin contact, inhalation.
<b>Inhalation</b>	<p>Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).</p> <p>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).</p>
<b>Skin Contact</b>	May cause mechanical skin irritation.
<b>Eye Contact</b>	May cause eye irritation.
<b>Ingestion</b>	None known
<b>Aggravated Medical Conditions</b>	Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

**Chronic Effects/Carcinogenicity** Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Other Information** For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

#### **Toxicity Tests**

<b>Oral Toxicity:</b>	Not determined
<b>Dermal Toxicity:</b>	Not determined
<b>Inhalation Toxicity:</b>	Not determined
<b>Primary Irritation Effect:</b>	Not determined
<b>Carcinogenicity</b>	Refer to <u>IARC Monograph 68, Silica, Some Silicates and Organic Fibres</u> (June 1997).
<b>Genotoxicity:</b>	Not determined
<b>Reproductive / Developmental Toxicity:</b>	Not determined

## **12. ECOLOGICAL INFORMATION**

<b>Mobility (Water/Soil/Air)</b>	Not determined
<b>Persistence/Degradability</b>	Not determined
<b>Bio-accumulation</b>	Not Determined

#### **Ecotoxicological Information**

<b>Acute Fish Toxicity:</b>	TLM96: 10000 ppm (Oncorhynchus mykiss)
<b>Acute Crustaceans Toxicity:</b>	Not determined

<b>Acute Algae Toxicity:</b>	Not determined
<b>Chemical Fate Information</b>	Not determined
<b>Other Information</b>	Not applicable

**13. DISPOSAL CONSIDERATIONS**

<b>Disposal Method</b>	Bury in a licensed landfill according to federal, state, and local regulations.
<b>Contaminated Packaging</b>	Follow all applicable national or local regulations.

**14. TRANSPORT INFORMATION**

**Land Transportation**

**DOT**  
Not restricted

**Canadian TDG**  
Not restricted

**ADR** Not restricted

**Air Transportation**

**ICAO/IATA** Not restricted

**Sea Transportation**

**IMDG** Not restricted

**Other Shipping Information**

**Labels:** None

**15. REGULATORY INFORMATION**

**US Regulations**

**US TSCA Inventory** All components listed on inventory.

**EPA SARA Title III Extremely Hazardous Substances** Not applicable

**EPA SARA (311,312) Hazard Class** Acute Health Hazard  
Chronic Health Hazard

**EPA SARA (313) Chemicals** This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

**EPA CERCLA/Superfund Reportable Spill Quantity** Not applicable.

**EPA RCRA Hazardous Waste Classification** If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**California Proposition 65** The California Proposition 65 regulations apply to this product.



<b>MA Right-to-Know Law</b>	One or more components listed.
<b>NJ Right-to-Know Law</b>	One or more components listed.
<b>PA Right-to-Know Law</b>	One or more components listed.
<b>Canadian Regulations</b>	
<b>Canadian DSL Inventory</b>	All components listed on inventory.
<b>WHMIS Hazard Class</b>	D2A Very Toxic Materials Crystalline silica

## 16. OTHER INFORMATION

### The following sections have been revised since the last issue of this MSDS

Not applicable

#### Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

#### Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***



## MATERIAL SAFETY DATA SHEET

Product Trade Name: **EZ-MUD®**

Revision Date: 02-Jan-2007

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: EZ-MUD®  
Synonyms: None  
Chemical Family: Blend  
Application: Shale Inhibitor

Manufacturer/Supplier: Baroid Drilling Fluids  
a Product Service Line of Halliburton Energy Services, Inc.  
P.O. Box 1675  
Houston, TX 77251  
Telephone: (281) 871-4000  
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance  
Telephone: 1-580-251-4335

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum distillate	64742-47-8	10 - 30%	200 mg/m <sup>3</sup>	Not applicable

### 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed.

### 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated shoes and discard.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	> 200
Flash Point/Range (C):	Min: > 200
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Min: > 93
Autoignition Temperature (C):	PMCC
Flammability Limits in Air - Lower (%):	> 392
Flammability Limits in Air - Upper (%):	> 200
	Not Determined
	Not Determined

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**NFPA Ratings:** Health 2, Flammability 1, Reactivity 0  
**HMIS Ratings:** Flammability 1, Reactivity 0, Health 2

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

**Storage Information** Store away from oxidizers. Keep container closed when not in use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** Organic vapor respirator with a dust/mist filter. In high concentrations, supplied air respirator or a self-contained breathing apparatus.

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Rubber apron.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	White to gray
Odor:	Mild hydrocarbon
pH:	6-8

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Specific Gravity @ 20 C (Water=1):	1.0
Density @ 20 C (lbs./gallon):	8.3
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	347
Boiling Point/Range (C):	175
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	0.002
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	70
Evaporation Rate (Butyl Acetate=1):	< 1
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

## 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation.
Eye Contact	May cause severe eye irritation.
Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.
Aggravated Medical Conditions	Lung disorders.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Other Information**                      None known.

**Toxicity Tests**

**Oral Toxicity:**                      Not determined  
**Dermal Toxicity:**                      Not determined  
**Inhalation Toxicity:**                      Not determined  
**Primary Irritation Effect:**                      Not determined  
**Carcinogenicity**                      Not determined  
**Genotoxicity:**                      Not determined  
**Reproductive /  
Developmental Toxicity:**                      Not determined

**12. ECOLOGICAL INFORMATION**

**Mobility (Water/Soil/Air)**                      Not determined  
**Persistence/Degradability**                      BOD(28 Day): 40% of COD  
**Bio-accumulation**                      Not Determined

**Ecotoxicological Information**

**Acute Fish Toxicity:**                      TLM96: >1000 mg/l (Pimephales promelas)  
**Acute Crustaceans Toxicity:** TLM48: 98 mg/l (Acartia tonsa)  
**Acute Algae Toxicity:**                      EC50: 16.70 mg/l (Skeletonema costatum)

**Chemical Fate Information**                      Not determined  
**Other Information**                      Not applicable

**13. DISPOSAL CONSIDERATIONS**

**Disposal Method**                      Disposal should be made in accordance with federal, state, and local regulations.  
**Contaminated Packaging**                      Follow all applicable national or local regulations.

**14. TRANSPORT INFORMATION**

**Land Transportation**

**DOT**  
Not restricted

**Canadian TDG**  
Not restricted

**ADR** Not restricted

**Air Transportation**

**ICAO/IATA** Not restricted

## Sea Transportation

IMDG Not restricted

## Other Shipping Information

Labels: None

## 15. REGULATORY INFORMATION

### US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity For This Product	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

### Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

## 16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

**Additional Information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***



**MATERIAL SAFETY DATA SHEET****Product Trade Name:**           **QUIK-FOAM®****Revision Date:**                   06-Jan-2005**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Product Trade Name:**           QUIK-FOAM®  
**Synonyms:**                       None  
**Chemical Family:**               Blend  
**Application:**                   Foaming Agent**Manufacturer/Supplier**           Baroid Drilling Fluids  
a Product Service Line of Halliburton Energy Services, Inc.  
P.O. Box 1675  
Houston, TX 77251  
Telephone: (281) 871-4000  
Emergency Telephone: (281) 575-5000**Prepared By**                       Chemical Compliance  
Telephone: 1-580-251-4335**2. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>SUBSTANCE</b>	<b>CAS Number</b>	<b>PERCENT</b>	<b>ACGIH TLV-TWA</b>	<b>OSHA PEL-TWA</b>
Isopropanol	67-63-0	5 - 10%	200 ppm	400 ppm
Ethanol	64-17-5	5 - 10%	1000 ppm	1000 ppm

**3. HAZARDS IDENTIFICATION****Hazard Overview**                   May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be absorbed through the skin. May be harmful if swallowed. Repeated overexposure may cause liver and kidney effects. Flammable.**4. FIRST AID MEASURES****Inhalation**                       If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.  
**Skin**                               In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.  
**Eyes**                               In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.  
**Ingestion**                       Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.  
**Notes to Physician**               Not Applicable

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	74
Flash Point/Range (C):	23
Flash Point Method:	PMCC
Autoignition Temperature (F):	750
Autoignition Temperature (C):	398
Flammability Limits in Air - Lower (%):	2
Flammability Limits in Air - Upper (%):	12

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** May be ignited by heat, sparks or flames. Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

**NFPA Ratings:** Health 1, Flammability 3, Reactivity 0  
**HMIS Ratings:** Flammability 3, Reactivity 0, Health 1

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ground and bond containers when transferring from one container to another.

**Storage Information** Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use. Product has a shelf life of 24 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** Organic vapor respirator.

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Rubber apron.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Light yellow
Odor:	Alcohol
pH:	7.3-7.8
Specific Gravity @ 20 C (Water=1):	1.02
Density @ 20 C (lbs./gallon):	8.52
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	192
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

## 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers. Strong alkalis.
Hazardous Decomposition Products	Oxides of sulfur. Oxides of nitrogen. Ammonia. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion.
Eye Contact	May cause eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions. May cause kidney damage.
Aggravated Medical Conditions	None known.

**Chronic Effects/Carcinogenicity** Repeated overexposure may cause liver and kidney effects.

**Other Information** None known.

### Toxicity Tests

**Oral Toxicity:** LD50: 5840 mg/kg (Rat)

**Dermal Toxicity:** Not determined

**Inhalation Toxicity:** Not determined

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive /  
Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not determined

**Bio-accumulation** Not Determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined

**Acute Crustaceans Toxicity:** Not determined

**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

#### DOT

Flammable Liquid, N.O.S., 3, UN1993, III, (23.3 C)  
(Contains Ethanol, Isopropanol)

NAERG 128

Not Restricted when shipped in containers less than 119 gallons as authorized by 49 CFR 173.150(e)(1) and 49 CFR 173.150(f)(2).

#### DOT BULK

**Canadian TDG**

Flammable Liquid, N.O.S.(Contains Ethanol, Isopropanol), 3, UN1993, III, (23.3 C)

**ADR**

UN1993,Flammable Liquid, N.O.S.(Contains Ethanol, Isopropanol), 3, III

**Air Transportation****ICAO/IATA**

UN1993,Flammable Liquid, N.O.S., 3, III  
(Contains Ethanol, Isopropanol Solution)

**Sea Transportation****IMDG**

UN1993,Flammable Liquid, N.O.S.(Contains Ethanol, Isopropanol), 3, III, (23.3 C)  
EmS F-E, S-E

**Other Shipping Information**

Labels: Flammable Liquid

<b>15. REGULATORY INFORMATION</b>
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**US Regulations**

**US TSCA Inventory** All components listed on inventory.

**EPA SARA Title III Extremely Hazardous Substances** Not applicable

**EPA SARA (311,312) Hazard Class** Acute Health Hazard  
Chronic Health Hazard  
Fire Hazard

**EPA SARA (313) Chemicals** This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372:  
Isopropanol//67-63-0

**EPA CERCLA/Superfund Reportable Spill Quantity For This Product** Not applicable.

**EPA RCRA Hazardous Waste Classification** If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:

Ignitability D001

**California Proposition 65** All components listed do not apply to the California Proposition 65 Regulation.

**MA Right-to-Know Law** One or more components listed.

**NJ Right-to-Know Law** One or more components listed.

**PA Right-to-Know Law** One or more components listed.

**Canadian Regulations**

**Canadian DSL Inventory** All components listed on inventory.

**WHMIS Hazard Class** B2 Flammable Liquids  
D2B Toxic Materials

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**

Not applicable

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***

# HALLIBURTON

## MATERIAL SAFETY DATA SHEET

### QUIK-GEL®

Revision Date: 02/25/2002

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** QUIK-GEL®  
**Synonyms:** None  
**Chemical Family:** Mineral  
**Application:** Viscosifier

**Manufacturer/Supplier**  
Baroid Drilling Fluids  
a Product Service Line of Halliburton Energy Services, Inc.  
P.O. Box 1675  
Houston, TX 77251

Telephone: (281) 871-4000  
Emergency Telephone: (800) 666-9260 or (713) 676-3000

**Prepared By**  
Product Stewardship  
Telephone: 1-580-251-4335

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Substance</u>	<u>Weight Percent (%)</u>	<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Crystalline silica, cristobalite 14464-46-1	0 - 1%	0.05 mg/m <sup>3</sup>	1/2 x <u>10 mg/m<sup>3</sup></u> %SiO <sub>2</sub> + 2
Crystalline silica, tridymite 15468-32-3	0 - 1%	0.05 mg/m <sup>3</sup>	1/2 x <u>10 mg/m<sup>3</sup></u> %SiO <sub>2</sub> + 2
Bentonite 1302-78-9	60 - 100%	Not applicable	Not applicable
Crystalline silica, quartz 14808-60-7	1 - 5%	0.05 mg/m <sup>3</sup>	<u>10 mg/m<sup>3</sup></u> %SiO <sub>2</sub> + 2

More restrictive exposure limits may be enforced by some states, agencies, or other authorities.

### 3. HAZARDS IDENTIFICATION

#### Hazard Overview

#### CAUTION! - ACUTE HEALTH HAZARD

May cause eye and respiratory irritation.

#### DANGER! - CHRONIC HEALTH HAZARD

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

### 4. FIRST AID MEASURES

#### Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

#### Skin

Wash with soap and water. Get medical attention if irritation persists.

#### Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

#### Ingestion

Under normal conditions, first aid procedures are not required.

#### Notes to Physician

Treat symptomatically.

### 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

#### Fire Extinguishing Media

All standard firefighting media.

#### Special Exposure Hazards

Not applicable.



**Special Protective Equipment for Fire-Fighters**

Not applicable.

**NFPA Ratings:**

Health 0, Flammability 0, Reactivity 0

**HMIS Ratings:**

Flammability 0, Reactivity 0, Health 0\*

**6. ACCIDENTAL RELEASE MEASURES****Personal Precautionary Measures**

Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures**

None known.

**Procedure for Cleaning/Absorption**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

**7. HANDLING AND STORAGE****Handling Precautions**

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Storage Information**

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Engineering Controls**

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

**Respiratory Protection**

Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product.

**Hand Protection**

Normal work gloves.

**Skin Protection**

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection**

Wear safety glasses or goggles to protect against exposure.

**Other Precautions**

None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Powder
<b>Color:</b>	Various
<b>Odor:</b>	Mild earthy
<b>pH:</b>	8-10
<b>Specific Gravity @ 20 C (Water=1):</b>	2.6
<b>Density @ 20 C (lbs./gallon):</b>	Not Determined
<b>Bulk Density @ 20 C (lbs/ft3):</b>	47.6 (uncompacted) 72.1 (compacted)
<b>Boiling Point/Range (F):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (F):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Slightly soluble
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>Solubility in Sea Water (g/100ml):</b>	Insoluble Sinks
<b>VOCs (lbs./gallon):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	Not Determined
<b>Viscosity, Kinematic @ 20 C (centistrokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	Not Determined
<b>Molecular Weight (g/mole):</b>	Not Determined

## 10. STABILITY AND REACTIVITY

**Stability Data:** Stable

**Hazardous Polymerization:** Will Not Occur

### Conditions to Avoid

None anticipated

### Incompatibility (Materials to Avoid)

Hydrofluoric acid.

### Hazardous Decomposition Products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

### Additional Guidelines

Not Applicable

## 11. TOXICOLOGICAL INFORMATION

### Principle Route of Exposure

Eye or skin contact, inhalation.

**Inhalation**

Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

**Skin Contact**

May cause mechanical skin irritation.

**Eye Contact**

May cause eye irritation.

**Ingestion**

None known

**Aggravated Medical Conditions**

Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

**Chronic Effects/Carcinogenicity**

**Silicosis:** Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

**Cancer Status:** The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Other Information**

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

**Toxicity Tests**

<b>Oral Toxicity:</b>	Not determined
<b>Dermal Toxicity:</b>	Not determined
<b>Inhalation Toxicity:</b>	Not determined
<b>Primary Irritation Effect:</b>	Not determined

**ADR**

Not restricted

**Air Transportation****ICAO/IATA**

Not restricted

**Sea Transportation****IMDG**

Not restricted

**Other Shipping Information**

Labels: None

**15. REGULATORY INFORMATION****US Regulations****US TSCA Inventory**

All components listed on inventory.

**EPA SARA Title III Extremely Hazardous Substances**

Not applicable

**EPA SARA (311,312) Hazard Class**

Acute Health Hazard  
Chronic Health Hazard

**EPA SARA (313) Chemicals**

This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

**EPA CERCLA/Superfund Reportable Spill Quantity For This Product**

Not applicable.

**EPA RCRA Hazardous Waste Classification**

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**California Proposition 65**

The California Proposition 65 regulations apply to this product.

**MA Right-to-Know Law**

One or more components listed.

**NJ Right-to-Know Law**

One or more components listed.

**PA Right-to-Know Law**

One or more components listed.

**Canadian Regulations**

**Canadian DSL Inventory**

All components listed on inventory.

**WHMIS Hazard Class**

D2A Very Toxic Materials  
(Crystalline silica)

**16. OTHER INFORMATION**

**The following sections have been revised since the last issue of this MSDS**

Not applicable

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Product Stewardship at 1-800-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***



## MATERIAL SAFETY DATA SHEET

Product Trade Name: **QUIK-GROUT®**

Revision Date: 05-Jan-2009

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: QUIK-GROUT®  
Synonyms: None  
Chemical Family: Mineral  
Application: Grouting Material  
Manufacturer/Supplier: Baroid Fluid Services  
Product Service Line of Halliburton  
P.O. Box 1675  
Houston, TX 77251  
Telephone: (281) 871-4000  
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance  
Telephone: 1-580-251-4335  
e-mail: fdunexchem@halliburton.com

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Ammonium bisulfate	7783-20-2	1 - 5%	Not applicable	Not applicable
Crystalline silica, tridymite	15468-32-3	0 - 1%	0.05 mg/m <sup>3</sup>	1/2 x 10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Crystalline silica, cristobalite	14464-46-1	0 - 1%	0.025 mg/m <sup>3</sup>	1/2 x 10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Crystalline silica, quartz	14808-60-7	1 - 5%	0.025 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> %SiO <sub>2</sub> + 2
Bentonite	1302-78-9	60 - 100%	Not applicable	Not applicable

### 3. HAZARDS IDENTIFICATION

#### Hazard Overview

**CAUTION! - ACUTE HEALTH HAZARD**

May cause eye and respiratory irritation.

**DANGER! - CHRONIC HEALTH HAZARD**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

### 4. FIRST AID MEASURES

#### Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

#### Skin

Wash with soap and water. Get medical attention if irritation persists.

#### Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

#### Ingestion

Under normal conditions, first aid procedures are not required.

#### Notes to Physician

Treat symptomatically.

### 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

**Fire Extinguishing Media** All standard firefighting media.

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Not applicable.

**NFPA Ratings:** Health 0, Flammability 0, Reactivity 0  
**HMIS Ratings:** Health 0\*, Flammability 0, Reactivity 0

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** None known.



**Procedure for Cleaning / Absorption**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

**7. HANDLING AND STORAGE**

**Handling Precautions**

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Storage Information**

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls**

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

**Respiratory Protection**

Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.

**Hand Protection**

Normal work gloves.

**Skin Protection**

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection**

Wear safety glasses or goggles to protect against exposure.

**Other Precautions**

None known.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State:</b>	Solid
<b>Color:</b>	Beige to Tan
<b>Odor:</b>	Odorless
<b>pH:</b>	8-10
<b>Specific Gravity @ 20 C (Water=1):</b>	2.5
<b>Density @ 20 C (lbs./gallon):</b>	Not Determined
<b>Bulk Density @ 20 C (lbs/ft3):</b>	74
<b>Boiling Point/Range (F):</b>	Not Determined
<b>Boiling Point/Range (C):</b>	Not Determined
<b>Freezing Point/Range (F):</b>	Not Determined
<b>Freezing Point/Range (C):</b>	Not Determined
<b>Vapor Pressure @ 20 C (mmHg):</b>	Not Determined
<b>Vapor Density (Air=1):</b>	Not Determined
<b>Percent Volatiles:</b>	Not Determined
<b>Evaporation Rate (Butyl Acetate=1):</b>	Not Determined
<b>Solubility in Water (g/100ml):</b>	Insoluble
<b>Solubility in Solvents (g/100ml):</b>	Not Determined
<b>VOCs (lbs./gallon):</b>	Not Determined
<b>Viscosity, Dynamic @ 20 C (centipoise):</b>	Not Determined
<b>Viscosity, Kinematic @ 20 C (centistrokes):</b>	Not Determined
<b>Partition Coefficient/n-Octanol/Water:</b>	Not Determined
<b>Molecular Weight (g/mole):</b>	Not Determined

## 10. STABILITY AND REACTIVITY

<b>Stability Data:</b>	Stable
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Conditions to Avoid</b>	None anticipated
<b>Incompatibility (Materials to Avoid)</b>	Copper and copper alloys. Zinc.
<b>Hazardous Decomposition Products</b>	Oxides of sulfur. Oxides of nitrogen. Ammonia. Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).
<b>Additional Guidelines</b>	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

<b>Principle Route of Exposure</b>	Eye or skin contact, inhalation.
<b>Inhalation</b>	<p>Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).</p> <p>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).</p>
<b>Skin Contact</b>	May cause mechanical skin irritation.
<b>Eye Contact</b>	May cause eye irritation.
<b>Ingestion</b>	None known
<b>Aggravated Medical Conditions</b>	Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

**Chronic Effects/Carcinogenicity** Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Other Information** For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

#### **Toxicity Tests**

<b>Oral Toxicity:</b>	Not determined
<b>Dermal Toxicity:</b>	Not determined
<b>Inhalation Toxicity:</b>	Not determined
<b>Primary Irritation Effect:</b>	Not determined
<b>Carcinogenicity</b>	Refer to <u>IARC Monograph 68, Silica, Some Silicates and Organic Fibres</u> (June 1997).
<b>Genotoxicity:</b>	Not determined
<b>Reproductive / Developmental Toxicity:</b>	Not determined

## **12. ECOLOGICAL INFORMATION**

<b>Mobility (Water/Soil/Air)</b>	Not determined
<b>Persistence/Degradability</b>	Not determined
<b>Bio-accumulation</b>	Not Determined

#### **Ecotoxicological Information**

<b>Acute Fish Toxicity:</b>	Not determined
<b>Acute Crustaceans Toxicity:</b>	Not determined

<b>Acute Algae Toxicity:</b>	Not determined
<b>Chemical Fate Information</b>	Not determined
<b>Other Information</b>	Not applicable

**13. DISPOSAL CONSIDERATIONS**

<b>Disposal Method</b>	Bury in a licensed landfill according to federal, state, and local regulations.
<b>Contaminated Packaging</b>	Follow all applicable national or local regulations.

**14. TRANSPORT INFORMATION**

**Land Transportation**

**DOT**  
Not restricted

**Canadian TDG**  
Not restricted

**ADR** Not restricted

**Air Transportation**

**ICAO/IATA** Not restricted

**Sea Transportation**

**IMDG** Not restricted

**Other Shipping Information**

**Labels:** None

**15. REGULATORY INFORMATION**

**US Regulations**

**US TSCA Inventory** All components listed on inventory or are exempt.

**EPA SARA Title III Extremely Hazardous Substances** Not applicable

**EPA SARA (311,312) Hazard Class** Acute Health Hazard  
Chronic Health Hazard

**EPA SARA (313) Chemicals** This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

**EPA CERCLA/Superfund Reportable Spill Quantity** Not applicable.

**EPA RCRA Hazardous Waste Classification** If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**California Proposition 65** The California Proposition 65 regulations apply to this product.



**Material Safety Data Sheet**

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**SECTION I - GENERAL INFORMATION**

Black Swan Manufacturing Co. 4540 W. Thomas Street Chicago, IL 60651-3318 Telephone No: 1-773-227-3700 Fax No: 1-773-227-3705	For chemical emergencies during transportation only call  INFOTRAC <b>1-800-535-5053</b> 24 hours per day - 7 days a week
<b>Date Prepared</b>  1/1/06	<b>Trade Name</b>  <b>ADHESIVE-LUBE</b>

**SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION**

HAZARDOUS COMPONENTS	CAS#	APPROX%	ACGIH-TLV	OSHA-PEL
TOLUENE	108-88-3	50	100 ppm	200 f
SYNTHETIC RUBBER	Mfg. Proprietary	25	N/L	N/L
PETROLEUM HYDROCARBON	64742-88-7	20	N/L	500 f

\*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 an 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.

<b>SHIPPING INFORMATION</b>	<b>SPECIAL HAZARD DESIGNATIONS</b>		
CONSUMER COMMODITY ORM-D		<u>HMIS</u>	<u>HAZARD RATING</u>
	HEALTH	2	0 - MINIMAL
	FLAMMABILITY	3	1- SLIGHT
	REACTIVITY	0	2- MODERATE
	PROTECTIVE EQUIPMENT	3	3- SERIOUS 4- SEVERE

### SECTION III - PHYSICAL DATA

<b>APPEARANCE</b>	<b>ODOR</b>	<b>BOILING POINT</b>
BLACK VISCOUS LIQUID	CHARACTERISTIC SOLVENT ODOR	ABOUT 215° F
<b>SPECIFIC GRAVITY (H2O=1)</b>  0.926	<b>(VAPOR PRESSURE mm Hg.)</b>  23	<b>VOLATILE BY VO (%)</b>  70
<b>VAPOR DENSITY (AIR=1)</b>  3.3	<b>EVAPORATION RATE (BUAC=1)</b>  <1	<b>SOLUBILITY IN W</b>  INSOLUBLE

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

<b>FLASH POINT ( METHOD USED)</b>	<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>U</b>
40° F (T.C.C.)	(PERCENT BY VOLUME)	0.9%	7

#### **FIRE EXTINGUISHING MEDIA**

FOAM, CARBON DIOXIDE OR DRY CHEMICALS

#### **SPECIAL FIRE FIGHTING PROCEDURES**

**WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING**

**UNUSAL FIRE AND EXPLOSION HAZARD**

VAPORS MAY TRAVEL CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK

**SECTION V - HEALTH HAZARD DATA**

PRIMARY ROUTES OR ENTRY  Inhalation  Skin contact  Eye contact  
 Ingestion

**EFFECT OF OVEREXPOSURE**

**INHALATION:** IT IS A RESPIRATORY TRACT IRRITANT AND ANESTHETIC A CAUSES CENTRAL NERVOUS SYSTEM DEPRESSION.

**SKIN:** MAY CAUSE SKIN IRRITATION AND DERMATITIS UPON PROLONGED REPEATED CONTACT.

**EYES:** MAY BE AN IRRITANT.

**INGESTION:** VOMITING.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

ANY PRE-EXISTING HEART OR SKIN CONDITION OR AN IMPAIRED LUNG FUNCTION.

**EMERGENCY AND FIRST AID PROCEDURES**

**EYES:** FLUSH WITH LARGE AMOUNT OF WATER FOR AT LEAST 15 MINUTES! CONSULT PHYSICIAN.

**SKIN:** WASH THOROUGHLY WITH SOAP AND WATER.

**INHALATION:** REMOVE TO FRESH AIR. IF BREATHING STOPS, BEGIN ARTIFICIAL RESPIRATION AND CONSULT A PHYSICIAN.

**INGESTION:** DO NOT INDUCE VOMITING. CONSULT PHYSICIAN.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		<b>CONDITIONS TO AVOID</b> SPARKS, OPEN FLAMES, HOT SURFACES AND
	STABLE	X	STRONG OXIDIZING AGENTS.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

STRONG OXIDIZING AGENTS, STRONG ACIDS.

**HAZARDOUS DECOMPOSITION PRODUCTS**

CARBON MONOXIDE AND DIOXIDE

HAZARDOUS POLYMERIZATION	MAY OCCUR		<b>CONDITIONS TO AVOID</b>
	WILL NOT OCCUR	X	SPARKS, OPEN FLAMES OR HOT SURFACES.

**SECTION VII - SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**ABSORB ON SUITABLE INERT MATERIAL. REMOVE ALL SOURCES OF  
IGNITION.**WASTE DISPOSAL METHOD**DISPOSE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERA  
REGULATIONS.**SECTION VIII - SPECIAL PROTECTION INFORMATION****RESPIRATORY PROTECTION (Specify type)**USE A NIOSH/MSHA APPROVED CARTRIDGE RESPIRATOR UNLESS AIR  
MONITORING DEMONSTRATES THAT VAPOR/MIST LEVELS ARE WITHIN  
APPLICABLE LIMITS.**VENTILATION**



**MECHANICAL****PROTECTIVE GLOVES**

IMPERMEABLE GLOVES  
RECOMMENDED

**EYE PROTECTION**

SAFETY GLASSES WITH SIDE SHIELDS OR  
CHEMICAL GOGGLES.

**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**

AVAILABILITY OF EYE WASHES AND SAFETY SHOWERS IS RECOMMENDED

**SECTION IX - SPECIAL PRECAUTIONS****PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

KEEP AND STORE IN COOL, DRY PLACE AWAY FROM SOURCES OF IGNITION  
GROUND DURING TRANSFER.

**OTHER PRECAUTIONS**

REPEATED AND PROLONGED OVEREXPOSURE TO SOLVENTS MAY CAUSE  
BRAIN AND NERVOUS SYSTEM DAMAGE. CONCENTRATING AND INHALING  
THE CONTENTS MAY BE HARMFUL OR FATAL.

**This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.**

**Black Swan Mfg. Co.** Telephone: 773-227-3700

4540 W. Thomas      Wats:      800-252-5796

Street      Fax:      773-227-3705

Chicago, IL 60651-      E-mail:      info@blackswanmfg.com

3318      Web      http://www.blackswanmfg.com  
site:

<b>MA Right-to-Know Law</b>	One or more components listed.
<b>NJ Right-to-Know Law</b>	One or more components listed.
<b>PA Right-to-Know Law</b>	One or more components listed.
<b>Canadian Regulations</b>	
<b>Canadian DSL Inventory</b>	All components listed on inventory.
<b>WHMIS Hazard Class</b>	D2A Very Toxic Materials Crystalline silica

## 16. OTHER INFORMATION

### The following sections have been revised since the last issue of this MSDS

Not applicable

#### Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

#### Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**\*\*\*END OF MSDS\*\*\***



## Bowl & Porcelain Cleaner

Material Safety Data Sheet

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<b>Date Prepared</b> 01/01/08		<b>Trade Name</b> <b>BOWL &amp; PORCELAIN CLEANER</b>		
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION				
HAZARDOUS COMPONENTS	CAS#	APPROX%	ACGIH-TLV	OSHA-PEL
HYDROCHLORIC ACID	7647-01-0	1-5%	5 ppm	5 ppm
*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.				
SHIPPING INFORMATION		SPECIAL HAZARD DESIGNATIONS		
CONSUMER COMMODITY ORM-D		<u>HMIS</u> HEALTH 1 FLAMMABILITY 0 REACTIVITY 0 PROTECTIVE EQUIPMENT B	<u>HAZARD RATING</u> 0 - MINIMAL 1- SLIGHT 2- MODERATE 3- SERIOUS 4- SEVERE	

<b>SECTION III - PHYSICAL DATA</b>			
<b>APPEARANCE</b> OPAQUE, BLUE LIQUID	<b>ODOR</b> PLEASANTLY SCENTED	<b>BOILING POINT</b> 212 F	
<b>SPECIFIC GRAVITY (H2O=1)</b> 1.02	<b>VAPOR PRESSURE (mm Hg.)</b> 18	<b>VOLATILE BY VOLUME (%)</b> N/A	
<b>VAPOR DENSITY (AIR=1)</b> <1	<b>EVAPORATION RATE (BUAC=1)</b> <1	<b>SOLUBILITY IN WATER</b> COMPLETE	
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>			
<b>FLASH POINT ( METHOD USED)</b>	<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>UEL</b>
NONE	(PERCENT BY VOLUME)	N/A	N/A
<b>FIRE EXTINGUISHING MEDIA</b> WATER.			
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> HYDROGEN CHLORIDE GAS MAY BE RELEASED IF PRODUCT IS HEATED. USE A GAS MASK.			
<b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> HCL FUMES REACT WITH MOST COMMON METALS TO PRODUCE HYDROGEN GAS WHICH CAN BE A FIRE AND/OR EXPLOSION HAZARD.			
<b>SECTION V - HEALTH HAZARD DATA</b>			
PRIMARY ROUTES OR ENTRY _____ Inhalation <input checked="" type="checkbox"/> Skin contact _____ Eye contact <input checked="" type="checkbox"/> Ingestion _____			
<b>EFFECT OF OVEREXPOSURE</b> <u>EYES</u> : MAY IRRITATE EYES.  <u>SKIN</u> : MAY IRRITATE SKIN.  <u>INGESTION</u> : MAY IRRITATE GASTROINTESTINAL TRACT AND AFFECT OTHER INTERNAL ORGANS.			

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

UNKNOWN.

**EMERGENCY AND FIRST AID PROCEDURES**

QUICKLY FOLLOW DIRECTIONS BELOW; CALL A POISON CONTROL CENTER OR PHYSICIAN. GET QUICK MEDICAL ATTENTION IF ANY ILL EFFECTS CONTINUE TO DEVELOP LATER.

EYES: FLUSH EYES WITH PLENTY OF WATER WHILE REMOVING ANY CONTACT LENSES, THEN HOLD EYELIDS OPEN AND CONTINUE FLUSHING THOROUGHLY.

SKIN: REMOVE ANY CONTAMINATED CLOTHING, THEN WASH AFFECTED SKIN WITH SOAP AND WATER.

INGESTION: RINSE MOUTH WITH WATER, SPIT OUT RINSE, THEN DRINK A GLASSFUL OF WATER. DO NOT INDUCE VOMITING UNLESS DIRECTED BY MEDICAL PERSONNEL.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		<b>CONDITIONS TO AVOID</b>
	STABLE	X	AVOID HEATING TO ABNORMAL TEMPERATURES.

**INCOMPATIBILITY (MATERIALS TO AVOID)**  
AVOID STRONGLY CAUSTIC MATERIALS.

**HAZARDOUS DECOMPOSITION PRODUCTS**  
HCL AND OXIDES OF CARBON AND SULFUR MAY BE FORMED UPON COMBUSTION.

HAZARDOUS POLYMERIZATION	MAY OCCUR		<b>CONDITIONS TO AVOID</b>
	WILL NOT OCCUR	X	NONE

**SECTION VII - SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

WIPE OR MOP UP SPILLS, THEN RINSE WITH WATER.

**WASTE DISPOSAL METHOD**

WASTE, INCLUDING SPILLS OR RINSEATES AND LEFTOVER PRODUCT THAT CANNOT BE USED ACCORDING TO APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. EMPTY CONTAINERS SHOULD BE DISPOSED OF PER LABEL DIRECTIONS, IN THE TRASH, OR OFFERED FOR RECYCLING IF ALLOWED BY FEDERAL, STATE, AND LOCAL REQUIREMENTS.

<b>SECTION VIII - SPECIAL PROTECTION INFORMATION</b>	
<b>RESPIRATORY PROTECTION (Specify type)</b> NONE REQUIRED.	
<b>VENTILATION</b> MECHANICAL - ADEQUATE VENTILATION.	
<b>PROTECTIVE GLOVES</b> RUBBER OR PLASTIC	<b>EYE PROTECTION</b> SAFETY GLASSES
<b>OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES</b> N/A	
<b>SECTION IX - SPECIAL PRECAUTIONS</b>	
<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING</b> CAUTION - MAY IRRITATE EYE OR SKIN. AVOID CONTACT WITH EYES OR SKIN. KEEP OUT OF REACH OF CHILDREN. STORE IN A COOL, DRY AREA. DO NOT TAKE INTERNALLY.	
<b>OTHER PRECAUTIONS</b> READ AND FOLLOW LABEL DIRECTIONS.	
This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.	

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**Black Swan Mfg. Co.** Telephone:773-227-3700 E-mail: [info@blackswanmfg.com](mailto:info@blackswanmfg.com)  
4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705



## Flange & Gasket

Material Safety Data Sheet

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<b>Date Prepared</b> 01/01/08	<b>Trade Name</b> Flange & Gasket																								
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION																									
HAZARDOUS COMPONENTS	CAS#    APPROX%    ACGIH-TLV    OSHA-PEL																								
THIS PRODUCT IS NOT CLASSIFIED AS HAZARDOUS ACCORDING WITH OSHA 1910.1200.																									
*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.																									
SHIPPING INFORMATION	SPECIAL HAZARD DESIGNATIONS																								
NOT HAZARDOUS FOR SHIPPING PURPOSES.	<table> <thead> <tr> <th></th> <th><u>HMIS</u></th> <th><u>NFPA</u></th> <th><u>HAZARD RATING</u></th> </tr> </thead> <tbody> <tr> <td>HEALTH</td> <td>0</td> <td>0</td> <td>0 - MINIMAL</td> </tr> <tr> <td>FLAMMABILITY</td> <td>1</td> <td>1</td> <td>1 - SLIGHT</td> </tr> <tr> <td>REACTIVITY</td> <td>0</td> <td>0</td> <td>2- MODERATE</td> </tr> <tr> <td>PROTECTIVE</td> <td></td> <td></td> <td>3- SERIOUS</td> </tr> <tr> <td>EQUIPMENT</td> <td>X</td> <td></td> <td>4- SEVERE</td> </tr> </tbody> </table>		<u>HMIS</u>	<u>NFPA</u>	<u>HAZARD RATING</u>	HEALTH	0	0	0 - MINIMAL	FLAMMABILITY	1	1	1 - SLIGHT	REACTIVITY	0	0	2- MODERATE	PROTECTIVE			3- SERIOUS	EQUIPMENT	X		4- SEVERE
	<u>HMIS</u>	<u>NFPA</u>	<u>HAZARD RATING</u>																						
HEALTH	0	0	0 - MINIMAL																						
FLAMMABILITY	1	1	1 - SLIGHT																						
REACTIVITY	0	0	2- MODERATE																						
PROTECTIVE			3- SERIOUS																						
EQUIPMENT	X		4- SEVERE																						

<b>SECTION III - PHYSICAL DATA</b>			
<b>APPEARANCE</b> SOLID AMBER	<b>ODOR</b> NEARLY ODORLESS	<b>BOILING POINT</b> N/A	
<b>SPECIFIC GRAVITY (H2O=1)</b> .85	<b>VAPOR PRESSURE (mm Hg.)</b> NIL	<b>VOLATILE BY VOLUME (%)</b> NIL	
<b>VAPOR DENSITY (AIR=1)</b> 10+	<b>EVAPORATION RATE (BUAC=1)</b> N/A	<b>SOLUBILITY IN WATER</b> NIL	
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>			
<b>FLASH POINT ( METHOD USED)</b>	<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>UEL</b>
500°F MIN P.M.	(PERCENT BY VOLUME)	ND	ND
<b>FIRE EXTINGUISHING MEDIA</b> CARBON DIOXIDE, FOAM, DRY CHEMICAL.			
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> DO NOT USE WATER AS IT MAY BE INEFFECTIVE IN EXTINGUISHING A FIRE INVOLVING THIS MATERIAL.			
<b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> NONE			
<b>SECTION V - HEALTH HAZARD DATA</b>			
PRIMARY ROUTES OR ENTRY _____ Inhalation <u>  X  </u> Skin contact _____ Eye contact _____ Ingestion _____			
<b>EFFECT OF OVEREXPOSURE</b> MIGHT IRRITATE SKIN.			
<b>MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE</b> SKIN DISORDERS.			
<b>EMERGENCY AND FIRST AID PROCEDURES</b> <u>SWALLOWING</u> - NONE NECESSARY.			



SKIN - NONE NECESSARY AS A SOLID. CONTACT WITH MELTED PETROLATUM CAN CAUSE THERMAL BURNS, FLUSH WITH WATER TO COOL AFFECTED AREAS AND CONTACT A PHYSICIAN IMMEDIATELY.

INHALATION - REMOVE TO FRESH AIR, CALL A PHYSICIAN.

EYES - FLUSH WITH WATER, CALL A PHYSICIAN.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		<b>CONDITIONS TO AVOID</b>
	STABLE	X	EXCESS HEAT, DIRECT FLAME.

**INCOMPATIBILITY (MATERIALS TO AVOID)**  
STRONG OXIDIZERS.

**HAZARDOUS DECOMPOSITION PRODUCTS**  
COMBUSTION WILL PRODUCE CARBON MONOXIDE AND OTHER ASPHYXIANTS.

HAZARDOUS POLYMERIZATION	MAY OCCUR		<b>CONDITIONS TO AVOID</b>
	WILL NOT OCCUR	X	NONE KNOWN.

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**  
RECOVER FREE SOLID. IF MOLTEN PARAFFIN SPILLED, SOLDIFY AND RECOVER.

**WASTE DISPOSAL METHOD**  
INCINERATE PER LOCAL, STATE AND FEDERAL REGULATIONS.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (Specify type)**  
N/A

**VENTILATION**  
N/A

**PROTECTIVE GLOVES**  
N/A

**EYE PROTECTION**  
N/A

**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**

N/A

**SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

AVOID EXCESSIVE HEAT OR DIRECT FLAME.

**OTHER PRECAUTIONS**

WHEN DEALING WITH HOT MELTED PETROLATUM, SPECIAL PRECAUTIONS PERTINENT TO YOUR OPERATION SHOULD BE AS FOLLOWED. AS WITH ANY PETROLEUM HYDROCARBON, PERSONAL HYGIENE IS IMPORTANT TO ASSURE THAT PROLONGED OR REPEATED CONTACT IS MINIMIZED.

HANDS AND OTHER EXPOSED AREAS SHOULD BE WASHED THOROUGHLY WITH SOAP AND WATER AFTER CONTACT, ESPECIALLY BEFORE EATING AND OR SMOKING.

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**Black Swan Mfg. Co.** Telephone:773-227-3700 E-mail: [info@blackswanmfg.com](mailto:info@blackswanmfg.com)  
4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705



## Furnace & Retort Cement

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<b>Date Prepared</b> 01/01/08	<b>Trade Name</b> <b>FURNACE &amp; RETORT CEMENT</b>																					
<b>SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION</b>																						
HAZARDOUS COMPONENTS	CAS#	APPROX%	ACGIH-TLV	OSHA-PEL																		
LIQUID SODIUM SILICATE	1344-09-8	10-20	TLV=2mg/m3	PEL=2mg/m3																		
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SHIPPING INFORMATION	SPECIAL HAZARD DESIGNATIONS																					
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	<u>HMS</u>	<u>HAZARD RATING</u>																				
	HEALTH	2																				
FLAMMABILITY	0	1- SLIGHT																				
REACTIVITY	0	2-MODERATE																				
PROTECTIVE EQUIPMENT	A	3- SERIOUS 4- SEVERE																				
		0 - MINIMAL																				

<b>SECTION III - PHYSICAL DATA</b>			
<b>APPEARANCE</b> GRAY TO BLACK	<b>ODOR</b> ODORLESS MORTAR	<b>BOILING POINT</b> N/A	
<b>SPECIFIC GRAVITY (H2O=1)</b> 1.75	<b>VAPOR PRESSURE (mm Hg.)</b> N/A	<b>VOLATILE BY VOLUME (%)</b> N/A	
<b>VAPOR DENSITY (AIR=1)</b> N/A	<b>EVAPORATION RATE (BUAC=1)</b> N/A	<b>SOLUBILITY IN WATER</b> SLIGHTLY SOLUBLE IN WATER AN WATER MISCIBLE.	
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>			
<b>FLASH POINT ( METHOD USED)</b>	<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>UEL</b>
N/A	(PERCENT BY VOLUME)	N/A	N/A
<b>FIRE EXTINGUISHING MEDIA</b> NON-FLAMMABLE. USE APPROPRIATE MEANS FOR SURROUNDING AREA.			
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> NONE			
<b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> NONE			
<b>SECTION V - HEALTH HAZARD DATA</b>			
PRIMARY ROUTES OR ENTRY _____ Inhalation <input checked="" type="checkbox"/> Skin contact <input checked="" type="checkbox"/> Eye contact _____ Ingestion _____			
<b>EFFECT OF OVEREXPOSURE</b> PROLONGED CONTACT WITH SKIN CAN CAUSE IRRITATION. CONTACT WITH EYES			

OR OPEN ABRADED SKIN CAN CAUSE SEVERE IRRITATION WITH SUPERFICIAL DESTRUCTION OF SKIN TISSUE.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

OPEN SORES AND CUTS—SENSITIVE SKIN AREAS.

**EMERGENCY AND FIRST AID PROCEDURES**

SKIN: WASH AFFECTED AREAS WITH SOAP AND WATER.

INGESTION: DO NOT INDUCE VOMITING, DILUTE WITH WATER OR MILK, GET MEDICAL ATTENTION.

EYES: FLUSH THE MATERIAL OUT IMMEDIATELY WITH PLENTY OF WATER.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		<b>CONDITIONS TO AVOID</b>
	STABLE	X	KEEP AWAY FROM ACIDS.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

ACIDS, ANHYDRIDES, ALKALI METALS, ANHYDROUS ALUMINIUM CHLORIDE NON FERROUS METALS AFTER SETTING.

**HAZARDOUS DECOMPOSITION PRODUCTS**

SHARP EDGES AFTER DRYING OR FIRING.

HAZARDOUS POLYMERIZATION	MAY OCCUR		<b>CONDITIONS TO AVOID</b>
	WILL NOT OCCUR	X	NONE

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

MATERIAL IS IN PASTE FORM. USE ABSORBENT MATERIAL AND SWEEP UP.

**WASTE DISPOSAL METHOD**

DISCARD AS NON-HAZARDOUS WASTE.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (Specify type)**

NONE REQUIRED.

**VENTILATION**

LOCAL EXHAUST - ADEQUATE.

**PROTECTIVE GLOVES**

RUBBER GLOVES

**EYE PROTECTION**

GOGGLES

**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**

NORMAL WORKING CLOTHING. PRACTICE NORMAL SAFETY AND HEALTH PROCEDURES.

WASH THOROUGHLY AFTER HANDLING.

**SECTION IX - SPECIAL PRECAUTIONS****PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

NORMAL SHELF STORAGE.

**OTHER PRECAUTIONS**

NONE

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**Black Swan Mfg. Co.** Telephone:773-227-3700 E-mail: [info@blackswanmfg.com](mailto:info@blackswanmfg.com)  
4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705



## Liquid Boiler Cleaner

Material Safety Data Sheet

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Manufacturing Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents, and contractors of the information on the sheet.

SECTION I - GENERAL INFORMATION				
Black Swan Manufacturing Co. 4540 W. Thomas Street Chicago, IL 60651-3318 Telephone No: 1-773-227-3700 Fax No: 1-773-227-3705		For chemical emergencies during transportation only call  INFOTRAC <b>1-800-535-5053</b> 24 hours per day - 7 days a week		
<b>Date Prepared</b> 01/01/08		<b>Trade Name</b> <b>LIQUID BOILER CLEANER</b>		
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION				
HAZARDOUS COMPONENTS	CAS#	APPROX%	ACGIH-TLV	OSHA-PEL
THIS PRODUCT IS NOT CLASSIFIED AS HAZARDOUS IN ACCORDANCE WITH OSHA 1910.1200.				
*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.				

<b>SHIPPING INFORMATION</b>  NOT HAZARDOUS FOR SHIPPING PURPOSES.		<b>SPECIAL HAZARD DESIGNATIONS</b>  <table border="0"> <thead> <tr> <th></th> <th><u>HMS</u></th> <th><u>HAZARD RATING</u></th> </tr> </thead> <tbody> <tr> <td>HEALTH</td> <td>1</td> <td>0 - MINIMAL</td> </tr> <tr> <td>FLAMMABILITY</td> <td>0</td> <td>1- SLIGHT</td> </tr> <tr> <td>REACTIVITY</td> <td>0</td> <td>2- MODERATE</td> </tr> <tr> <td>PROTECTIVE EQUIPMENT</td> <td>B</td> <td>3- SERIOUS 4- SEVERE</td> </tr> </tbody> </table>			<u>HMS</u>	<u>HAZARD RATING</u>	HEALTH	1	0 - MINIMAL	FLAMMABILITY	0	1- SLIGHT	REACTIVITY	0	2- MODERATE	PROTECTIVE EQUIPMENT	B	3- SERIOUS 4- SEVERE
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<b>SECTION III - PHYSICAL DATA</b>																		
<b>APPEARANCE</b> GREEN	<b>ODOR</b> ODORLESS	<b>BOILING POINT</b> 214Â° F																
<b>SPECIFIC GRAVITY (H2O=1)</b> 1.4	<b>VAPOR PRESSURE (mm Hg.)</b> APPROX. 17	<b>VOLATILE BY VOLUME (%)</b> N/A																
<b>VAPOR DENSITY (AIR=1)</b> APPROX. 16	<b>EVAPORATION RATE (BUAC=1)</b> >1	<b>SOLUBILITY IN WATER</b> SOLUBLE																
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>																		
<b>FLASH POINT ( METHOD USED)</b>		<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>UEL</b>														
N/A		(PERCENT BY VOLUME)	N/A	N/A														
<b>FIRE EXTINGUISHING MEDIA</b> USE PROPER EXTINGUISHER FOR SURROUNDING FIRE.																		
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> NORMAL FOR SURROUNDINGS.																		
<b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> NONE																		



**SECTION V - HEALTH HAZARD DATA**

PRIMARY ROUTES OR ENTRY \_\_\_\_\_ Inhalation  Skin contact \_\_\_\_\_ Eye contact  Ingestion

**EFFECT OF OVEREXPOSURE**

EYES: MIST OR SPRAY MAY BE IRRITATING TO EYES.

SKIN: MIST OR SPRAY MAY BE IRRITATING.

INHALATION: MAY IRRITATE MUCOUS MEMBRANES OF THE RESPIRATORY TRACT.

INGESTION: MAY IRRITAE ESOPHAGUS AND STOMACH

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

NONE KNOWN.

**EMERGENCY AND FIRST AID PROCEDURES**

EYES: FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES.

INHALATION: GET PERSON OUT OF AREA TO FRESH AIR.

INGESTION: DO NOT INDUCE VOMITING.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	NONE

**INCOMPATIBILITY (MATERIALS TO AVOID)**  
DO NOT MIX WITH ETHYLENE GLYCOL SOLUTIONS.

**HAZARDOUS DECOMPOSITION PRODUCTS**

NONE

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	NONE

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

STOP LEAK AND TRY TO REPLACE INTO CONTAINER. FLUSH SPILL AREA WITH WATER.

**WASTE DISPOSAL METHOD**

NON-HAZARDOUS LANDFILL.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (Specify type)**

USE A NIOSH/MSHA APPROVED RESPIRATOR WHEN MIST IS MADE.

**VENTILATION**

NONE

**PROTECTIVE GLOVES**

RUBBER GLOVES

**EYE PROTECTION**

FACE SHIELD OR CHEMICAL GOGGLES

**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**

STANDARD WORK CLOTHING.

**SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

DO NOT STORE IN ALUMINUM CONTAINERS. DO NOT PLACE IN CONTACT WITH ACIDS.

**OTHER PRECAUTIONS**

PLACE LIDS ON CONTAINERS WHEN NOT IN USE.

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4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705



## Liquid Boiler Stop-Leak

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<b>Date Prepared</b> 01/01/08		<b>Trade Name</b> <b>LIQUID BOILER STOP-LEAK</b>																				
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION																						
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EQUIPMENT	A	4- SEVERE																				

<b>SECTION III - PHYSICAL DATA</b>			
<b>APPEARANCE</b> BLACK LIQUID	<b>ODOR</b> SLIGHT	<b>BOILING POINT</b> 214° F	
<b>SPECIFIC GRAVITY (H2O=1)</b> 1.2	<b>VAPOR PRESSURE (mm Hg.)</b> N/A	<b>VOLATILE BY VOLUME (%)</b> N/A	
<b>VAPOR DENSITY (AIR=1)</b> N/A	<b>EVAPORATION RATE (BUAC=1)</b> N/A	<b>SOLUBILITY IN WATER</b> SOLUBLE	
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>			
<b>FLASH POINT ( METHOD USED)</b>	<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>UEL</b>
N/A	(PERCENT BY VOLUME)	N/A	N/A
<b>FIRE EXTINGUISHING MEDIA</b> USE EXTINGUISHING MEDIA APPROPRIATE TO IGNITION SOURCE OF FIRE.			
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> NONE			
<b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> NONE.			
<b>SECTION V - HEALTH HAZARD DATA</b>			
PRIMARY ROUTES OR ENTRY _____ Inhalation <input checked="" type="checkbox"/> Skin contact <input checked="" type="checkbox"/> Eye contact <input checked="" type="checkbox"/> Ingestion			
<b>EFFECT OF OVEREXPOSURE</b> <u>EYE CONTACT</u> : CAUSES IRRITATION.  <u>SKIN CONTACT</u> : CAUSES IRRITATION.			

INGESTION: CAUSES IRRITATION TO ESOPHAGUS AND STOMACH.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

NONE KNOWN.

**EMERGENCY AND FIRST AID PROCEDURES**

EYES: FLUSH WITH WATER FOR 15 MINUTES.

SKIN: FLUSH WITH PLENTY OF WATER.

INGESTION: GIVE LARGE QUANTITIES OF WATER OR MILK. DO NOT INDUCE VOMITING.

IN ALL CASES CALL A PHYSICIAN.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	NONE.

**INCOMPATIBILITY (MATERIALS TO AVOID)**  
DO NOT MIX WITH ACIDS.

**HAZARDOUS DECOMPOSITION PRODUCTS**

NONE

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	NONE.

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

REPLACE INTO CONTAINER. NON-HAZARDOUS LANDFILL IF NECESSARY.

**WASTE DISPOSAL METHOD**

COMPLY WITH FEDERAL, STATE AND LOCAL REGULATIONS. NON-HAZARDOUS LANDFILL.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (Specify type)**

USE A NIOSH/MSHA APPROVED RESPIRATOR WHEN MIST OR SPRAY IS PRESENT.

<b>VENTILATION</b> NONE	
<b>PROTECTIVE GLOVES</b> RUBBER GLOVES	<b>EYE PROTECTION</b> SAFETY GLASSES
<b>OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES</b> NONE	
<b>SECTION IX - SPECIAL PRECAUTIONS</b>	
<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING</b> KEEP OUT OF REACH OF CHILDREN.	
<b>OTHER PRECAUTIONS</b> NONE	
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1301 E. 9th Street, #700  
Cleveland OH 44114  
(800) 726-9626



Material Safety Data Sheet

MSDS Form No. : 19140N

Item No. :

\*\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*\*

MARKAL DURA-INK #15

Part # 19140N

\*\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*\*

MSDS Name: MARKAL DURA-INK #15

Product CAS: (none)

Product Code:

Synonyms: 19140N; 19141; 19142; MARKAL DURA-INK #15

Company Identification:

Name: LA-CO INDUSTRIES, INC. / MARKAL COMPANY

Address: 1201 PRATT BLVD.

Address:

City: ELK GROVE VILLAGE State: IL Zip: 60007-5746

For information, call: 847-956-7600

Emergency Number: 800-424-9300/703-527-3887

Emergency Agency: CHEMTREC USA/INTERNATIONAL (CALL COLLECT)

Number:

MSDS Creation Date: 6/1/2005

Supersedes Date:

\*\*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*\*

Chemical Name	CAS	MIN	MAX
N-PROPANOL	71-23-8	40	50
N-BURANOL	71-36-3	0	25
DIACETONE ALCOHOL	123-42-2	5	25
BENZYL ALCOHOL	100-51-6	0	6
ETHANOL	64-17-5	0	30
ISOPROPANOL	67-63-0	0	3
METHANOL	67-56-1	0	1.2

Miscellaneous:

INGREDIENT

N-PROPANOL

ACGIH: TWA = 200 PPM, STEL =250 PPM

OSHA: TWA = 200 PPM

CLEARN AIR ACT SECTION 111 VOLATILE ORGANIC COMPOUND

N-BUTANOL

ACGIH: CEILING = 50

OSHA: TWA = 100 PPM

EPA: CERCLA RQ = 5000 LBS EPCRA SECTION 313 DE MINIMIS

CONCENTRATION = 10%, CLEAN AIR ACT SECTION 111

VOLATILE ORGANIC COMPOUND

DIACETONE ALCOHOL

ACGIH: CEILING = 50 PPM

OSHA: TWA - 50 PPM

CLEARN AIR ACT SECTION 111 VOLATILE ORGANIC COMPOUND

BENZY ALCOHOL

CLEAN AIR ACT SECTION 111 VOLATILE ORGANIC COMPOUND

ETHANOL

ACGIH: TWA = 1000 PPM

OSHA: TWA = 1000 PPM

CLEAN AIR ACT SECTION III VOLATILE ORGANIC COMPOUND

ISOPROPANOL

ACGIH: TWA =400 PPM, STEL=500 PPM

OSHA: TWA = 400 PPM

EPA: EPCRA SECTION 313 DE MINIMS CONCENTRATION = 0.1%

CLEAN AIR ACT SECTION 111 VOLATILE ORGANIC COMPOUND

METHANOL

ACHIG: TWA=200 PPM, SEL, 250 PPM

OSHA: TWA= 200 PPM

EPA: CERCLA RQ=5000 LBS EPCRA SECTION 313 DE MINIMIS

CONCENTRATION = 1.0%, CLEAN AIR ACT SECTION III

VOLATILE ORGANIC COMPOUND

Lbs of VOC per Gallon Coating (minus water): 0

Coating Density (lbs/gal): 0

Solvent Density (lbs/gal): 0

Percent Solvent (volume): 0

Percent Solids (volume): 0

Percent Water (volume): 0

\*\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*\*

NFPA: Health: Fire: Reactivity: Other:

HMIS: Health: Fire: Reactivity: Special Protection:



POTENTIAL HEALTH EFFECTS

Target Organs:

Eye:

N/A

Skin:

N/A

Ingestion:

N/A

Inhalation:

N/A

Miscellaneous:

\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\*

Eye:

N/A

Skin:

N/A

Ingestion:

N/A

Inhalation:

N/A

Notes to Physician:

\*\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*\*

Unusual Fire and Explosion Hazards:

NONE KNOWN.

Special Fire Fighting Procedures:

KEEP PERSONNEL REMOVED AND UPWIND OF ANY FIRE. WEAR FULL FIRE FIGHTING TURN-OUT GEAR (FULL BUNKER GEAR), AND RESPIRATORY PROTECTION (SCBA). CONTAINERS EXPOSED TO INTENSE HEAT SHOULD BE COOLED WITH WATER TO PREVENT PRESSURE BUILDUP, WHICH COULD RESULT ON CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

**Extinguishing Media:**  
CO2,FOAM, DRY CHEMICAL, CARBON DIOXIDE.

**Flash Point:**  
72 DEG F/22 DEG C

**Flammable Limits:**  
**Lower Limit:**  
1.4%  
**Upper Limit:**  
14.0%

**AutoIgnition Temperature:**  
N.D.

**General Information:**  
CLOSED CUP ASTM D93

\*\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*\*

**Disposal:**  
DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

**Spills/Leaks:**  
USE RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT, WIPE UP WITH ABSORBENT MATERIAL.

\*\*\*\* SECTION 7 - HANDLING and STORAGE \*\*\*\*

**Handling:**  
DO NOT SHAKE MARKER, WASH HANDS THOROUGHLY

**Storage:**  
STORE IN A COOL DRY AREA.

\*\*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*\*

**Engineering Controls:**  
LOCAL EXHAUST.

**Eyes:**  
NONE UNDER NORMAL CONDITIONS

**Skin:**  
NONE UNDER NORMAL CONDITIONS

**Clothing:**  
NONE

**Respirators:**

NONE

\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*

Appearance/Odor:

LIQUID INK ABSORBED IN FELT RESERVOIR  
SOLVENT LIKE ODOR

pH: N.A.

Vapor Pressure: 0.8 - 13

Vapor Density: N.D.

Evaporation Rate: 0.14 - 1.3

Viscosity: N.A

Boiling Point: 207 DEG F/97 DEG C

Freezing/Melting Point: N.D.

Decomposition Temperature: N.A.

Solubility: IN WATER: PARTIALLY MISCIBLE

Specific Gravity: 0.88

Molecular Formula: N.A.

Molecular Weight: N.A.

Miscellaneous:

VOC 80% - 95% (W/W), 82% - 96% (V/V), 5.4 - 6.4 LBS/GAL U.S.

0.65 - 0.77 KG/L

\*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\*

Chemical Stability:

STABLE

Conditions to Avoid:

NONE.

Incompatibilities with Other Materials:

OXIDIZERS

Hazardous Decomposition Products:

NOT DETERMINED

Hazardous Polymerization:

WILL NOT OCCUR.

\*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\*

Toxicological Information:

SENSITIZATION TO PRODUCT

IRRITANCY OF PRODUCT

REPRODUCTIVE TOXICITY

TERATOGENICITY

MUTAGENICITY

ALL NOT APPLICABLE

\*\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*\*

Ecological Information:

MOBILITY

DEGRADABILITY

ACCUMULATION

ECOTOXICITY

OTHER ADVERSE EFFECTS

ALL NOT DETERMINED

\*\*\*\* SECTION 13 - OTHER PRECAUTIONS \*\*\*\*

Other Precautions:

NO DATA

Work/Hygienic Practices:

WASH HANDS AFTER USE.

\*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\*

Transportation Information:

D.O.T. (U.S.)

PROPER SHIPPING NAME: NOT REGULATED

HAZARD CLASS OR DIVISION: NOT REGULATED

HAZARD LABEL: NOT REGULATED

I.D. NUMBER: NOT REGULATED

TDG (CANADA) NOT REGULATED

IATA: NOT REGULATED

ICAO AND IMO: NOT REGULATED

AUSTRALIAN CODE FOR THE TRANSPORT OF DANGEROUS GOODS  
DANGEROUS GOOD CLASS AND SUBSIDIARY RISK: NOT DETERMINED.

Label Information:

NO DATA

\*\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*\*

Regulatory Information:

NO DATA



## NO-HUB SEALANT

### Material Safety Data Sheet

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SECTION I - GENERAL INFORMATION				
Black Swan Manufacturing Co. 4540 W. Thomas Street Chicago, IL 60651-3318 Telephone No: 1-773-227-3700 Fax No: 1-773-227-3705		For chemical emergencies during transportation only call  INFOTRAC <b>1-800-535-5053</b> 24 hours per day - 7 days a week		
<b>Date Prepared</b>  01/01/08		<b>Trade Name</b> NO-HUB SEALANT		
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION				
HAZARDOUS COMPONENTS	CAS#	APPROX%	ACGIH-TLV	OSHA-PEL
ETHYL ALCOHOL	64-17-5	25-30	1000 ppm	1000 ppm
METHYL ALCOHOL	67-56-1	1-2	200 ppm	200 ppm
ETHYL ACETATE	141-78-6	<1	400 ppm	400 ppm
ACETONE	67--64-1	35-45	500 ppm	1000 ppm
*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.				
SHIPPING INFORMATION		SPECIAL HAZARD DESIGNATIONS		
CONSUMER COMMODITY ORM-D		<b>HMIS</b> HEALTH 1 FLAMMABILITY 3 REACTIVITY 0 PROTECTIVE EQUIPMENT B	<b>HAZARD RATING</b> 0 - MINIMAL 1- SLIGHT 2- MODERATE 3- SERIOUS 4- SEVERE	

SECTION III - PHYSICAL DATA			
<b>APPEARANCE</b> AMBER VISCOUS LIQUID	<b>ODOR</b> CHARACTERISTIC SOLVENT ODOR	<b>BOILING POINT</b> ABOUT 170°F	
<b>SPECIFIC GRAVITY (H2O=1)</b> APPROX - 0.7	<b>VAPOR PRESSURE (mm Hg.)</b> N/A	<b>VOLATILE BY VOLUME (%)</b> 70	
<b>VAPOR DENSITY (AIR=1)</b> >1	<b>EVAPORATION RATE (BUAC=1)</b> >1	<b>SOLUBILITY IN WATER</b> INSOLUBLE	
SECTION IV - FIRE AND EXPLOSION HAZARD DATA			
<b>FLASH POINT ( METHOD USED)</b>	<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>UEL</b>
65°F (T.C.C.)	(PERCENT BY VOLUME)	0.9%	7.0%
<b>FIRE EXTINGUISHING MEDIA</b> FOAM, CARBON DIOXIDE OR DRY CHEMICALS			
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> WEAR SELF CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING			
<b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> VAPORS MAY TRAVEL CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK.			
SECTION V - HEALTH HAZARD DATA			
PRIMARY ROUTES OR ENTRY <input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Skin contact <input type="checkbox"/> Eye contact <input checked="" type="checkbox"/> Ingestion			
<b>EFFECT OF OVEREXPOSURE</b> <p>INHALATION: IT IS A RESPIRATORY TRACT AND ANESTHETIC AND OVER EXPOSURE CAN CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION.</p> <p>SKIN: MAY CAUSE SKIN IRRITATION AND DERMATITIS UPON PROLONGED OR REPEATED CONTACT.</p> <p>EYES: MAY BE AN IRRITANT.</p>			

INGESTION: VOMITING

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

Any pre-existing heart or skin condition or an impaired lung function.

**EMERGENCY AND FIRST AID PROCEDURES**

EYES: FLUSH WITH LARGE AMOUNT OF WATER FOR AT LEAST 15 MINUTES.  
CONSULT PHYSICIAN.

SKIN CONTACT: WASH THOROUGHLY WITH SOAP AND WATER.

INHALATION: REMOVE TO FRESH AIR. IF BREATHING STOPS, BEGIN ARTIFICIAL RESPIRATION AND CONSULT PHYSICIAN.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		<b>CONDITIONS TO AVOID</b>
	STABLE	X	SPARKS, OPEN FLAMES, HOT SURFACES AND STRONG OXIDIZING AGENTS.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

STRONG OXIDIZING AGENTS, STRONG ACIDS.

**HAZARDOUS DECOMPOSITION PRODUCTS**

CARBON MONOXIDE AND DIOXIDE

HAZARDOUS POLYMERIZATION	MAY OCCUR		<b>CONDITIONS TO AVOID</b>
	WILL NOT OCCUR	X	SPARKS, OPEN FLAMES OR HOT SURFACES

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

ABSORB ON SUITABLE INERT MATERIAL. REMOVE ALL SOURCES OF IGNITION.

**WASTE DISPOSAL METHOD**

DISPOSE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (Specify type)**

USE A NIOSH/MSHA APPROVED CARTRIDGE RESPIRATOR UNLESS AIR MONITORING DEMONSTRATES THAT VAPOR/MIST LEVELS ARE WITHIN APPLICABLE LIMITS.

**VENTILATION**  
MECHANICAL

**PROTECTIVE GLOVES**  
IMPERMEABLE GLOVES  
RECOMMENDED

**EYE PROTECTION**  
SAFETY GLASSES WITH SIDE SHIELDS OR  
CHEMICAL GOGGLES.

**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**  
AVAILABILITY OF EYE WASHES AND SAFETY SHOWERS IS RECOMMENDED.

**SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**  
KEEP AND STORE IN A COOL, DRY PLACE FROM SOURCES OF IGNITION. GROUND  
DURING TRANSFER.

**OTHER PRECAUTIONS**  
REPEATED AND PROLONGED OVEREXPOSURE TO SOLVENTS MAY CAUSE BRAIN  
AND NERVOUS SYSTEM DAMAGE. CONCENTRATING AND INHALING THE CONTENTS  
MAY BE HARMFUL OR FATAL.

**This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.**

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**Black Swan Mfg. Co.** Telephone:773-227-3700 E-mail: [info@blackswanmfg.com](mailto:info@blackswanmfg.com)  
4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705





## Silicone Sealant

### Material Safety Data Sheet

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Manufacturing Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents, and contractors of the information on the sheet.

SECTION I - GENERAL INFORMATION			
Black Swan Manufacturing Co. 4540 W. Thomas Street Chicago, IL 60651-3318 Telephone No: 1-773-227-3700 Fax No: 1-773-227-3705		For chemical emergencies during transportation only call  INFOTRAC <b>1-800-535-5053</b> 24 hours per day - 7 days a week	
<b>Date Prepared</b> 01/01/08		<b>Trade Name</b> <b>SILICONE SEALANT</b>	
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION			
HAZARDOUS COMPONENTS	CAS#	APPROX% ACGIH-TLV	OSHA-PEL
METHYLTRIAACETOXYSILANE	0041533432	NONE ESTABLISHED	NONE ESTABLISHED
ETHYLTRIAACETOXYSILANE	0176897792	NONE ESTABLISHED	NONE ESTABLISHED
SILICA	00763186910	10 MG/M3	NONE ESTABLISHED
*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.			
<b>SHIPPING INFORMATION</b>		<b>SPECIAL HAZARD DESIGNATIONS</b>	
		<u>HMIS</u> <u>NFPA</u> <u>HAZARD RATING</u>	

<p>NOT HAZARDOUS FOR SHIPPING PURPOSES.</p>	<table border="0"> <tr> <td>HEALTH</td> <td>1</td> <td>1</td> <td>0 - MINIMAL</td> </tr> <tr> <td>FLAMMABILITY</td> <td>1</td> <td>1</td> <td>1- SLIGHT</td> </tr> <tr> <td>REACTIVITY</td> <td>0</td> <td>0</td> <td>2- MODERATE</td> </tr> <tr> <td>PROTECTIVE EQUIPMENT</td> <td>F</td> <td></td> <td>3- SERIOUS 4- SEVERE</td> </tr> </table>	HEALTH	1	1	0 - MINIMAL	FLAMMABILITY	1	1	1- SLIGHT	REACTIVITY	0	0	2- MODERATE	PROTECTIVE EQUIPMENT	F		3- SERIOUS 4- SEVERE
HEALTH	1	1	0 - MINIMAL														
FLAMMABILITY	1	1	1- SLIGHT														
REACTIVITY	0	0	2- MODERATE														
PROTECTIVE EQUIPMENT	F		3- SERIOUS 4- SEVERE														
<p>SECTION III - PHYSICAL DATA</p>																	
<p><b>APPEARANCE</b> SEMI-SOLID PASTE</p>	<p><b>ODOR</b> AMINE ODOR</p>	<p><b>BOILING POINT</b> N/A</p>															
<p><b>SPECIFIC GRAVITY (H2O=1)</b> 1.04</p>	<p><b>VAPOR PRESSURE (mm Hg.)</b> &lt;5 MM</p>	<p><b>VOLATILE BY VOLUME (%)</b> NON-VOLATILE</p>															
<p><b>VAPOR DENSITY (AIR=1)</b> N/A</p>	<p><b>EVAPORATION RATE (BUAC=1)</b> &lt;1</p>	<p><b>SOLUBILITY IN WATER</b> INSOLUBLE</p>															
<p>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</p>																	
<p><b>FLASH POINT ( METHOD USED)</b></p>	<p><b>FLAMMABLE LIMITS</b></p>	<p><b>LEL</b></p>	<p><b>UEL</b></p>														
<p>212Â° F/100Â° C</p>	<p>(PERCENT BY VOLUME)</p>	<p>N/A</p>	<p>N/A</p>														
<p><b>FIRE EXTINGUISHING MEDIA</b> WATER FOG, FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL</p>																	
<p><b>SPECIAL FIRE FIGHTING PROCEDURES</b> USE SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING SHOULD BE WORN.</p>																	
<p><b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> NONE</p>																	
<p>SECTION V - HEALTH HAZARD DATA</p>																	
<p>PRIMARY ROUTES OR ENTRY <input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Skin contact <input type="checkbox"/> Eye contact <input checked="" type="checkbox"/> Ingestion</p>																	
<p><b>EFFECT OF OVEREXPOSURE</b> INGESTION: MAY CAUSE STOMACH DISCOMFORT.</p>																	

SKIN CONTACT: UNCURED PRODUCT MAY IRRITATE LIPS, GUMS, TONGUE AND SKIN.

EYE CONTACT: UNCURED PRODUCT WILL IRRITATE EYES.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

NONE KNOWN.

**EMERGENCY AND FIRST AID PROCEDURES**

EYE: PRODUCT IS A SEMI-SOLID AND DIFFICULT TO GET INTO THE EYE. HOWEVER, IF PRODUCT DOES GET INTO THE EYE, RINSE WITH COPIOUS AMOUNTS OF WATER. IF IRRITATION DEVELOPS, SEEK MEDICAL ASSISTANCE.

SKIN: UNCATALYZED SILICONE RUBBER IS RELATIVELY INERT. FOR GOOD HYGIENE, WASH HANDS WITH SOAP AND WATER AFTER HANDLING.

INHALATION: UNCATALYZED SILICONE RUBBER DOES NOT EMIT VAPORS. REMOVE VICTIM FROM AREA OF EXPOSURE AND USE SUITABLE DUST MASK WHEN ADDING FILLERS AND PEROXIDES.

INGESTION: INDUCE VOMITING, SEEK MEDICAL ASSISTANCE.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	AIR OR MOISTURE CAUSES POLYMERIZATION AND ACETIC ACID VAPORS ARE FORMED.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

OXIDIZING MATERIAL CAN CAUSE A REACTION.

**HAZARDOUS DECOMPOSITION PRODUCTS**

SILICONE DIOXIDE, CARBON DIOXIDE AND TRACES OF INCOMPLETELY BURNED CARBON PRODUCTS.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	NONE

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

SCRAPE PRODUCT FROM CONTAMINATED AREAS REMOVING RESIDUE PRODUCT WITH SOLVENT.

**WASTE DISPOSAL METHOD**

INCINERATE IN A 10% WASTE SOLVENT SOLUTION IN FURNACE FITTED WITH AN AFTERBURN AND SCRUBBER/OR BURY IN AN APPROVED CHEMICAL LANDFILL ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (Specify type)**

USE NIOSH/MSHA APPROVED RESPIRATOR WITH APPROPRIATE CARTRIDGE.

**VENTILATION**

PROVIDE ADEQUATE VENTILATION DURING CURING. USE SUITABLE DUST MASK WHEN ADDING FILLERS AND PEROXIDES. VAPORS FROM THE DECOMPOSITION OF PEROXIDES OCCUR DURING THE CURING.

**PROTECTIVE GLOVES**

YES

**EYE PROTECTION**

SAFETY GLASSES WITH SIDE SHIELDS

**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**

WORK UNIFORMS. MAINTAIN EYE WASH FOUNTAIN.

**SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

STORE IN COOL, DRY PLACE IN TIGHTLY CLOSED CONTAINERS. AVOID BREATHING VAPORS FROM CURING. AVOID DIRECT OR PROLONGED CONTACT WITH EYES. WASH HANDS THOROUGHLY AFTER HANDLING. DO NOT EAT, DRINK OR SMOKE IN AREA.

**OTHER PRECAUTIONS**

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4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705



## Swan Wax

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SECTION I - GENERAL INFORMATION				
Black Swan Manufacturing Co. 4540 W. Thomas Street Chicago, IL 60651-3318 Telephone No: 1-773-227-3700 Fax No: 1-773-227-3705		For chemical emergencies during transportation only call  INFOTRAC <b>1-800-535-5053</b> 24 hours per day - 7 days a week		
<b>Date Prepared</b> 01/01/08		<b>Trade Name</b> <b>SWAN WAX</b>		
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION				
HAZARDOUS COMPONENTS	CAS#	APPROX%	ACGIH-TLV	OSHA-PEL
THIS PRODUCT IS NOT CLASSIFIED AS HAZARDOUS ACCORDING WITH OSHA 1910.1200.				
*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.				
SHIPPING INFORMATION		SPECIAL HAZARD DESIGNATIONS		
NOT HAZARDOUS FOR SHIPPING PURPOSES.				
		<u>HMS</u>	<u>NFPA</u>	<u>HAZARD RATING</u>
HEALTH		0	0	0 - MINIMAL
FLAMMABILITY		1	1	1 - SLIGHT
REACTIVITY		0	0	2 - MODERATE
PROTECTIVE EQUIPMENT				3 - SERIOUS
		X		4 - SEVERE

<b>SECTION III - PHYSICAL DATA</b>			
<b>APPEARANCE</b> SOLID AMBER	<b>ODOR</b> NEARLY ODORLESS	<b>BOILING POINT</b> N/A	
<b>SPECIFIC GRAVITY (H2O=1)</b> .85	<b>VAPOR PRESSURE (mm Hg.)</b> NIL	<b>VOLATILE BY VOLUME (%)</b> NIL	
<b>VAPOR DENSITY (AIR=1)</b> 10+	<b>EVAPORATION RATE (BUAC=1)</b> N/A	<b>SOLUBILITY IN WATER</b> NIL	
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>			
<b>FLASH POINT ( METHOD USED)</b>	<b>FLAMMABLE LIMITS</b>	<b>LEL</b>	<b>UEL</b>
500°F MIN P.M.	(PERCENT BY VOLUME)	ND	ND
<b>FIRE EXTINGUISHING MEDIA</b> CARBON DIOXIDE, FOAM, DRY CHEMICAL.			
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> DO NOT USE WATER AS IT MAY BE INEFFECTIVE IN EXTINGUISHING A FIRE INVOLVING THIS MATERIAL.			
<b>UNUSUAL FIRE AND EXPLOSION HAZARD</b> NONE			
<b>SECTION V - HEALTH HAZARD DATA</b>			
PRIMARY ROUTES OR ENTRY _____ Inhalation <input checked="" type="checkbox"/> Skin contact _____ Eye contact _____ Ingestion _____			

**EFFECT OF OVEREXPOSURE**

MIGHT IRRITATE SKIN.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

SKIN DISORDERS.

**EMERGENCY AND FIRST AID PROCEDURES**SWALLOWING - NONE NECESSARY.SKIN - NONE NECESSARY AS A SOLID. CONTACT WITH MELTED PETROLATUM CAN CAUSE THERMAL BURNS, FLUSH WITH WATER TO COOL AFFECTED AREAS AND CONTACT A PHYSICIAN IMMEDIATELY.INHALATION - REMOVE TO FRESH AIR, CALL A PHYSICIAN.EYES - FLUSH WITH WATER, CALL A PHYSICIAN.**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		<b>CONDITIONS TO AVOID</b>
	STABLE	X	EXCESS HEAT, DIRECT FLAME.

**INCOMPATIBILITY (MATERIALS TO AVOID)**  
STRONG OXIDIZERS.**HAZARDOUS DECOMPOSITION PRODUCTS**

COMBUSTION WILL PRODUCE CARBON MONOXIDE AND OTHER ASPHYXIANTS.

	MAY OCCUR		<b>CONDITIONS TO AVOID</b>
HAZARDOUS POLYMERIZATION	WILL NOT OCCUR	X	NONE KNOWN.

**SECTION VII - SPILL OR LEAK PROCEDURES****STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

RECOVER FREE SOLID. IF MOLTEN PARAFFIN SPILLED, SOLDIFY AND RECOVER.

**WASTE DISPOSAL METHOD**

INCINERATE PER LOCAL, STATE AND FEDERAL REGULATIONS.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

<b>RESPIRATORY PROTECTION (Specify type)</b> N/A	
<b>VENTILATION</b> N/A	
<b>PROTECTIVE GLOVES</b> N/A	<b>EYE PROTECTION</b> N/A
<b>OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES</b> N/A	
<b>SECTION IX - SPECIAL PRECAUTIONS</b>	
<b>PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING</b> AVOID EXCESSIVE HEAT OR DIRECT FLAME.	
<b>OTHER PRECAUTIONS</b> WHEN DEALING WITH HOT MELTED PETROLATUM, SPECIAL PRECAUTIONS PERTINENT TO YOUR OPERATION SHOULD BE AS FOLLOWED. AS WITH ANY PETROLEUM HYDROCARBON, PERSONAL HYGIENE IS IMPORTANT TO ASSURE THAT PROLONGED OR REPEATED CONTACT IS MINIMIZED. HANDS AND OTHER EXPOSED AREAS SHOULD BE WASHED THOROUGHLY WITH SOAP AND WATER AFTER CONTACT, ESPECIALLY BEFORE EATING AND OR SMOKING.	
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4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705





## Urinal Felt Wax Ring

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#### SECTION I - GENERAL INFORMATION

Black Swan Manufacturing Co.  4540 W. Thomas Street  Chicago, IL 60651-3318  Telephone No: 1-773-227-3700  Fax No: 1-773-227-3705	For chemical emergencies during  transportation only call  INFOTRAC  <b>1-800-535-5053</b>  24 hours per day - 7 days a week
<b>Date Prepared</b>  01/01/08	<b>Trade Name</b>  URINAL FELT WAX RING

#### SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

HAZARDOUS COMPONENTS	CAS#	APPROX%
ACGIH-TLV	OSHA-PEL	
THIS PRODUCT IS NOT CLASSIFIED AS HAZARDOUS ACCORDING WITH OSHA 1910.120.		
Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.		
<b><u>SHIPPING INFORMATION</u></b>  NOT HAZARDOUS FOR SHIPPING PURPOSES.	<b><u>SPECIAL HAZARD DESIGNATIONS</u></b>  HMIS      NFPA      HAZARD RATING	

HEALTH	0	0	0 - MINIMAL
FLAMMABILITY	1	1	1- SLIGHT
REACTIVITY MODERATE	0	0	2-
PROTECTIVE SERIOUS			3-
EQUIPMENT	X	X	4- SEVERE

### SECTION III - PHYSICAL DATA

APPEARANCE  SOLID AMBER	ODOR  NEARLY  ODORLESS	BOILING POINT  N/A
SPECIFIC GRAVITY (H <sub>2</sub> O=1)  .85	VAPOR PRESSURE (mm Hg.)  NIL	VOLATILE BY VOLUME (%)  NIL
VAPOR DENSITY (AIR=1)  10+	EVAPORATION RATE (BUAC=1)  N/A	SOLUBILITY IN WATER  NIL

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL	UEL
500°F MIN P.M.	(PERCENT BY VOLUME)	ND	ND
FIRE EXTINGUISHING MEDIA  CARBON DIOXIDE, FOAM, DRY CHEMICAL.			
SPECIAL FIRE FIGHTING PROCEDURES  DO NOT USE WATER AS IT MAY BE INEFFECTIVE IN EXTINGUISHING A FIRE INVOLVING THIS MATERIAL.			
UNUSAL FIRE AND EXPLOSION HAZARD			

NONE.

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES OR ENTRY     Inhalation     Skin contact     Eye contact  
 Ingestion

EFFECT OF OVEREXPOSURE

MOST IRRITATE SKIN.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

SKIN DISORDERS.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING: NONE NECESSARY

SKIN CONTACT: NONE NECESSARY AS A SOLID. CONTACT WITH MELTED PETROLATUM CAN CAUSE THERMAL BURNS, FLUSH WITH WATER TO COOL AFFECTED AREAS AND CONTACT A PHYSICIAN IMMEDIATELY.

INHALATION: REMOVE TO FRESH AIR, CALL A PHYSICIAN.

EYES: FLUSH WITH WATER, CALL A PHYSICIAN.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	EXCESS HEAT, DIRECT FLAME.

INCOMPATIBILITY (MATERIALS TO AVOID)  
STRONG OXIDIZERS.

HAZARDOUS DECOMPOSITION PRODUCTS

COMBUSTION WILL PRODUCE CARBON MONOXIDE AND OTHER ASPHYXIANTS.

HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION			

	WILL NOT OCCUR	X	NONE KNOWN
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**SECTION VII - SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

RECOVER FREE SOLID. IF MOLTEN PARAFFIN SPILLED, SOLIDIFY AND RECOVER.

WASTE DISPOSAL METHOD

INCINERATE PER LOCAL, STATE AND FEDERAL REGULATIONS.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

RESPIRATORY PROTECTION (Specify)

N/A

VENTILATION

N/A

PROTECTIVE GLOVES	EYE PROTECTION
N/A	N/A

OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

N/A

**SECTION IX - SPECIAL PRECAUTIONS**

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

AVOD EXCESSIVE HEAT OR DIRECT FLAME.

OTHER PRECAUTIONS

WHEN DEALING WITH HOT METED PETROLATUM, SPECIAL PRECAUTIONS PERTINENT TO YOUR OPERATION SHOULD BE AS FOLLOWED. AS WITH ANY PETROLEUM HYDROCARBON, PERSONAL HYGIENE IS IMPORTANT TO ASSURE THAT PROLONGED OR REPEATED CONTACT IS MINIMIZED. HANDS AND OTHER EXPOSED AREAS SHOULD BE WASHED THOROUGHLY WITH SOAP AND WATER AFTER CONTACT, ESPECIALLY BEFORE EATING AND/OR SMOKING.

**This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.**

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**Black Swan Mfg. Co.** Telephone:773-227-3700 E-mail: [info@blackswanmfg.com](mailto:info@blackswanmfg.com)  
4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705

\*\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*\*

Additional Information:  
NO DATA



## Zap Drain Pipe Opener

### Material Safety Data Sheet

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Manufacturing Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents, and contractors of the information on the sheet.

SECTION I - GENERAL INFORMATION				
Black Swan Manufacturing Co. 4540 W. Thomas Street Chicago, IL 60651-3318 Telephone No: 1-773-227-3700 Fax No: 1-773-227-3705		For chemical emergencies during transportation only call  INFOTRAC <b>1-800-535-5053</b> 24 hours per day - 7 days a week		
<b>Date Prepared</b> 01/01/08		<b>Trade Name</b> Zap Drain Pipe Opener		
SECTION II - HAZARDOUS INGREDIENTS / IDENTITY INFORMATION				
HAZARDOUS COMPONENTS	CAS#	APPROX%	ACGIH-TLV	OSHA-PEL
SULFURIC ACID	7664-93-9	93	(TWA) 1 mg/m3	(TWA) 1 mg/m3
*Title III Section 313 Supplier Notification: this product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency planning and community Right-to-Know Act of 1966 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.				
SHIPPING INFORMATION		SPECIAL HAZARD DESIGNATIONS		
<b><u>FOR CONTAINERS UNDER 1 LITER SIZE</u></b>		<u>HMS</u> HEALTH 3 FLAMMABILITY 0 REACTIVITY 2 PROTECTIVE EQUIPMENT H	<u>NFPA</u> 3 0 2	<u>HAZARD RATING</u> 0 - MINIMAL 1- SLIGHT 2- MODERATE 3- SERIOUS 4- SEVERE

CONSUMER COMMODITY ORM-D

**FOR CONTAINERS ABOVE 1 LITER  
SIZE**

SHIPPING NAME	SULFURIC ACID
HAZARD CLASS	8
LD. NO	UN1830
PACKING GROUP	II
FREIGHT CLASS	55
LABEL REQUIRED	CORROSIVE

**SECTION III - PHYSICAL DATA**

**APPEARANCE**  
AMBER LIQUID

**ODOR**  
ACID ODOR

**BOILING POINT**  
276Å° C (529Å° F)

**SPECIFIC GRAVITY (H2O=1)**  
1.775

**VAPOR PRESSURE  
(mm Hg.)**  
0.0016 mmHg

**VOLATILE BY VOLUME (%)**  
N/A

**VAPOR DENSITY (AIR=1)**  
3.4

**EVAPORATION RATE  
(BUAC=1)**  
<1

**SOLUBILITY IN WATER**  
COMPLETE

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT ( METHOD USED)

FLAMMABLE LIMITS

LEL

UEL

N/A

(PERCENT BY VOLUME)

N/A

N/A

**FIRE EXTINGUISHING MEDIA**

FOR SMALL FIRES USE DRY CHEMICALS OR CARBON DIOXIDE. FOR LARGE FIRES, FLOOD FIRE AREA WITH WATER FROM DISTANCE. EXPECT VIOLENT REACTION WITH WATER. DO NOT GET SOLID STREAM OF WATER ON SPILLED MATERIAL.

**SPECIAL FIRE FIGHTING PROCEDURES**

WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. COOL EXTERIOR OF STORAGE TANKS.

**UNUSUAL FIRE AND EXPLOSION HAZARD**

VIOLENT REACTION WITH WATER. EVOLUTION OF EXPLOSIVE HYDROGEN GAS ON CONTACT WITH MOST METALS. WILL REACT WITH ORGANIC MATERIAL WITH EVOLUTION OF HEAT AND DENSE WHITE FUMES.

**SECTION V - HEALTH HAZARD DATA**



PRIMARY ROUTES OR ENTRY  Inhalation  Skin contact  Eye contact  Ingestion

**EFFECT OF OVEREXPOSURE**

INHALATION: INHALATION OF CONCENTRATED VAPOR OR MIST MAY DAMAGE RESPIRATORY TRACT.

INGESTION: SWALLOWING MAY BE FATAL.

DIRECT CONTACT: CONTACT WITH LIQUID, MIST, OR VAPOR CAN CAUSE IMMEDIATE IRRITATION OR CORROSIVE BURNS TO ALL HUMAN TISSUE. SEVERITY OF THE BURN IS GENERALLY DETERMINED BY THE CONCENTRATION OF THE SOLUTION AND DURATION OF EXPOSURE.

EYE CONTACT: CONTACT WITH EYES MAY RESULT IN PERMANENT VISUAL LOSS UNLESS REMOVED QUICKLY BY THOROUGH IRRIGATION WITH WATER.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

REPEATED SKIN CONTACT WITH DILUTE SOLUTIONS MAY CAUSE DERMATITIS. MAY CAUSE DENTAL EROSION.

**EMERGENCY AND FIRST AID PROCEDURES**

EYES: FLUSH WITH WATER FOR 15 MINUTES AND GET PROMPT MEDICAL ATTENTION.

EXTERNAL: FLUSH WITH WATER FOR 15 MINUTES.

INTERNAL: DRINK LARGE QUANTITIES OF WATER OR MILK, FOLLOW WITH MILK OF MAGNESIA, BEATEN EGGS OR VEGETABLE OIL. CALL PHYSICIAN IMMEDIATELY. DO NOT INDUCE VOMITING.

INHALATION: REMOVE VICTIM TO FRESH AIR. IF NOT BREATHING, PERFORM ARTIFICIAL RESPIRATION.

**SECTION VI - REACTIVITY**

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	NONE

**INCOMPATIBILITY (MATERIALS TO AVOID)**

CONTACT WITH ORGANIC MATERIALS (SUCH AS CHLORATES, CARBIDES, FULMINATES AND PICRATES) MAY CAUSE FIRE AND EXPLOSIONS. CONTACT WITH METALS MAY PRODUCE FLAMMABLE HYDROGEN GAS. WHEN DILUTING, ADD ACID TO WATER.

**DO NOT ADD WATER TO ACID!!**

**HAZARDOUS DECOMPOSITION PRODUCTS**

TOXIC GASES AND VAPORS (E.G. SULFUR DIOXIDE, SULFURIC ACID VAPOR/MISTS AND

SULFUR TRIOXIDE) MAY BE RELEASED WHEN SULFURIC ACID DECOMPOSES.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	NONE

**SECTION VII - SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

USE 10% SODA ASH WITH SAND TO SLURRY SPILLAGE MIX AND ADD WATER CONTINUOUSLY, SCOOP UP AND WASH DOWN DRAIN WITH EXCESS WATER.

**WASTE DISPOSAL METHOD**

USE ANY METHOD FOR THE DISPOSAL OF CHEMICAL WASTES SUBJECT TO LOCAL REGULATIONS.

**SECTION VIII - SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (Specify type)**

IN INADEQUATE VENTILATED AREA USE SELF-CONTAINED BREATHING APPARATUS.

**VENTILATION**

MECHANICAL. WINDOWS.

**PROTECTIVE GLOVES**

RUBBER

**EYE PROTECTION**

FACE SHIELD OR SAFETY GLASSES

**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**

PLASTIC COVERING FOR CLOTHING & SHOES.

**SECTION IX - SPECIAL PRECAUTIONS**

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

STORE IN COOL, DRY AREA. AVOID EXCESSIVE HEAT AND BELOW FREEZING TEMPERATURES.

**OTHER PRECAUTIONS**

KEEP OUT OF REACH OF CHILDREN. DO NOT COMBINE WITH ALKALINE DRAIN CLEANERS.

This information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

# ITEM: 5HB63 - Battery AA 1.2v Pk 4

PICK\_REQ: 1042915465

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: B0659

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - B0659

Associated Grainger Item: 5HB63 - Battery AA 1.2v Pk 4

5HB63, 5HB64, 5HB66, 2CUR1

RAYOVAC(R\*)

RAYOVAC CORPORATION  
601 RAYOVAC DRIVE  
MADISON WI 53711  
PHONE: 608-275-3340  
FAX: 608-275-4577  
HTTP://WWW.RAYOVAC.COM

MATERIAL SAFETY DATA SHEET

1. WE WOULD LIKE TO INFORM OUR CUSTOMERS THAT THESE BATTERIES ARE EXEMPT ARTICLES AND ARE NOT SUBJECT TO THE 29 CFR 1910.1200 OSHA REQUIREMENT, OR TO THE CANADIAN WHMIS REQUIREMENTS AND THE SHEETS ARE SUPPLIED AS A SERVICE TO YOU. FOR OTHER MSDS AND RELATED INFORMATION, VISIT: HTTP://WWW.RAYOVAC.COM/TECHNICAL/MSDS.HTM.

## 1. IDENTIFICATION

PRODUCT NAME: NICKEL METAL HYDRIDE BATTERIES  
SIZES: ALL  
EMERGENCY TELEPHONE NUMBER: 800-424-9300 (24 HR, CHEMTREC)  
ENVIRONMENTAL HEALTH & SAFETY INFORMATION: 608-275-2482  
EDITION DATE: 03/05/2007  
APPROVED BY: KEVIN J. DOMACK

## 2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV#
NICKEL AND COMPOUNDS	7440-02-0		30-40 1.0 MG/M3 (SOLUBLE COMPOUNDS, TWA)
STEEL		15-25	
POTASSIUM HYDROXIDE	1310-58-3		10-15 NOT LISTED
COBALT AND COMPOUNDS	7440-48-4		4-8 0.1 MG/M3 (TWA)
MANGANESE	7439-96-5		<2 C 5.0 MG/M3 (TWA)
ALUMINUM	7429-90-5		<1 15 MG/M3 (TOTAL DUST, TWA)
LANTHANIDES, ZINC	7440-66-6 (Zn)		5-20 5 MG/M3 (ZnO, FUME, TWA)
WATER, PAPER, PLASTIC, OTHER			BALANCE

\*SOURCE: OSHA 29 CFR 1910.1000 TABLE Z-1, 2 OR 3 3-01-2007

## 3. PHYSICAL DATA

BOILING POINT (6) 760 MM HG (DEG. C): NA  
VAPOR PRESSURE (MM HG (6) 25 DEG. C): NA  
VAPOR DENSITY (AIR=1): NA  
DENSITY (GRAMS/CC): NA  
PERCENT VOLATILE BY VOLUME (%): NA  
EVAPORATION RATE (BUTYL ACETATE=1): NA  
PHYSICAL STATE: NA  
SOLUBILITY IN WATER (% BY WEIGHT): NA  
pH: NA  
APPEARANCE AND ODOR: GEOMETRIC SOLID OBJECT

## 4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA  
LOWER (LEL): NA  
UPPER (UEL): NA  
FLAMMABLE LIMITS IN AIR (%): NA  
EXTINGUISHING MEDIA: USE WATER, FOAM OR DRY POWDER, AS APPROPRIATE.  
AUTO-IGNITION: NA  
SPECIAL FIRE FIGHTING PROCEDURES:  
AS WITH ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF HAZARDOUS DECOMPOSITION PRODUCTS (SEE SECTION 2).

SPECIAL FIRE EXPLOSION HAZARDS:  
LIKE ANY SEALED CONTAINER, BATTERY CELLS MAY RUPTURE WHEN EXPOSED TO EXCESSIVE HEAT; THIS COULD RESULT IN THE RELEASE OF FLAMMABLE OR CORROSIVE MATERIALS.

## 5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA  
EFFECTS OF OVEREXPOSURE:  
NONE. (IN FIRE OR RUPTURE SITUATION SEE SECTION 2 AND SECTION 4)  
EMERGENCY FIRST AID PROCEDURES:  
SKIN AND EYES:  
IN THE EVENT THAT BATTERY RUPTURES, FLUSH EXPOSED SKIN WITH COPIOUS QUANTITIES OF FLOWING LUKEWARM WATER FOR A MINIMUM OF 15 MINUTES. GET IMMEDIATE MEDICAL ATTENTION FOR EYES. WASH SKIN WITH SOAP AND WATER.  
SWALLOWING:  
INGESTION OF A BATTERY CAN BE HARMFUL. CALL THE NATIONAL CAPITAL POISON CENTER (800-222-1222), DAY OR NIGHT, FOR ADVICE AND FOLLOW-UP.  
FOR MORE INFORMATION, VISIT: HTTP://WWW.NEMA.ORG/GOV/EHS/COMMITTEES/DRYBAT/

## 6. REACTIVITY DATA

STABLE OR UNSTABLE: STABLE  
INCOMPATIBILITY (MATERIALS TO AVOID): NA  
HAZARDOUS DECOMPOSITION PRODUCTS: NA  
DECOMPOSITION TEMPERATURE (0 DEG. F): NA  
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR  
CONDITIONS TO AVOID: AVOID ELECTRICAL SHORTING.

## 7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS:  
IN THE EVENT OF A BATTERY RUPTURE, PREVENT SKIN CONTACT AND COLLECT ALL RELEASED MATERIAL IN A PLASTIC LINED METAL CONTAINER.  
REPORTING PROCEDURE:  
REPORT ALL SPILLS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REPORTING REQUIREMENTS.  
WASTE DISPOSAL METHOD:  
WASTE NICKEL METAL HYDRIDE BATTERIES ARE NOT CONSIDERED A USEPA HAZARDOUS WASTE. THEIR COLLECTION AND RECYCLING ARE NOT REQUIRED UNDER US FEDERAL LAW. CONTACT YOUR BATTERY DISTRIBUTOR FOR DETAILS REGARDING RECYCLING AND DISPOSAL OPTIONS OR VISIT: HTTP://WWW.RBRC.ORG. FOR ADDITIONAL INFORMATION ON DISPOSAL OR RECYCLING OPTIONS, VISIT: HTTP://WWW.NEMA.ORG/GOV/EHS/COMMITTEES/DRYBAT/

## 8. PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NA  
VENTILATION:  
LOCAL EXHAUST: NA  
MECHANICAL (GENERAL): NA  
SPECIAL: NA  
OTHER: NA  
PROTECTIVE GLOVES: NA  
EYE PROTECTION: NA  
OTHER PROTECTIVE CLOTHING: NA

## 9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE:  
STORE IN A DRY PLACE. STORING UNPACKAGED CELLS TOGETHER COULD RESULT IN CELL SHORTING AND HEAT BUILD-UP.  
TRANSPORTATION-SHIPPING:  
THESE ARE "BATTERIES, DRY" AND ARE NOT CONSIDERED TO BE A "HAZARDOUS MATERIAL" PER THE DEPT. OF TRANSPORTATION (USDOT) REGULATIONS OR "DANGEROUS GOODS" PER THE INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) REGULATIONS. SHIPMENTS MUST COMPLY WITH THE GENERAL DUTY CLAUSE OF USDOT 49 CFR 172.102 (A) (1) SPECIAL PROVISION 130, "TO PREVENT SHORTING POTENTIAL WHILE TRANSPORTING."

## 10. SARA 313

NOTIFICATION IS NOT REQUIRED BECAUSE THESE PRODUCTS ARE ARTICLE(S) THAT DO NOT RELEASE A COVERED TOXIC CHEMICAL UNDER THE NORMAL CONDITIONS OF PROCESSING OR USE.

NOTICE:  
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NA = NOT APPLICABLE

NICKEL METAL HYDRIDE BATTERIES

03-05-2007

**Black Swan Mfg. Co.** Telephone:773-227-3700 E-mail: [info@blackswanmfg.com](mailto:info@blackswanmfg.com)  
4540 W. Thomas Street Wats:800-252-5796 Web site:<http://www.blackswanmfg.com>  
Chicago, IL 60651-3318 Fax:773-227-3705

ITEM: 4WT07 - Battery 1.5 V D Pk12

Vendor Grainger

PICK\_REQ: 1024014618

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: A6974

This MSDS should be attached or kept with the respective product with which it is associated.

##### MATERIAL SAFETY DATA SHEET - A6974 ##### MATERIALS. #####

Associated Grainger Item: 4WT07 - Battery 1.5 V D Pk12  
 4WT08, 4WT09, 4WT11, 5U076, 4LW07, 4LW13, 4LV99, 5U813, 3WA30, 3WA31, 3WA32  
 3WA33, 3WA34, 2ZB21

RAYOVAC(R\*)  
 RAYOVAC CORPORATION  
 601 RAYOVAC DRIVE  
 MADISON, WI 53711

PHONE: 608-275-3340

FAX: 608-275-4577

HTTP://WWW.RAYOVAC.COM

MATERIAL SAFETY DATA SHEET

1. WE WOULD LIKE TO INFORM OUR CUSTOMERS THAT THESE BATTERIES ARE EXEMPT ARTICLES AND ARE NOT SUBJECT TO THE 29 CFR 1910.1200 OSHA REQUIREMENT, OR TO THE CANADIAN WHMIS REQUIREMENTS AND THE SHEETS ARE SUPPLIED AS A SERVICE TO YOU. FOR OTHER MSDS AND RELATED INFORMATION, VISIT: HTTP://WWW.RAYOVAC.COM/CUSTOMER/MSDS/MSDS.SHTML.

2. THESE BATTERIES ARE SUITABLE FOR LANDFILL DISPOSAL (SEE SECTION 7).

1. IDENTIFICATION

PRODUCT NAME: ALKALINE BATTERIES - "NO MERCURY" FORMULA  
 SIZES: ALL  
 EMERGENCY TELEPHONE NUMBER: 800-424-9300 (24 HR, CHEMTREC)  
 ENVIRONMENTAL HEALTH & SAFETY INFORMATION: 262-523-9000  
 EDITION DATE: 03/01/2004  
 APPROVED BY: KEVIN J. DOMACK

2. INGREDIENTS

INGREDIENT NAME	CAS #	%	TLV*
MANGANESE DIOXIDE	1313-13-9	32 - 38	0.2 MG/M3 (TWA)
STEEL	7439-89-5	19 - 23	
ZINC	7440-66-6	11 - 16	2 MG/M3 (ZnO, DUST, TWA)
POTASSIUM HYDROXIDE	1310-58-3	5 - 9	C 2 MG/M3 (STEL)
GRAPHITE	7782-42-5	3 - 5	2 MG/M3 (TWA)
BARIUM SULFATE	7727-43-7	<5	10 MG/M3 (TWA)
WATER, PAPER, PLASTIC, OTHER			BALANCE

\*SOURCE: ACGIH THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS, 2003.

3. PHYSICAL DATA

BOILING POINT @ 760 MMHg (DEG. C): NA  
 VAPOR PRESSURE (MMHg @ 25 DEG. C): NA  
 VAPOR DENSITY (AIR = 1): NA  
 DENSITY (GRAMS/CC): NA  
 PERCENT VOLATILE BY VOLUME (%): NA  
 EVAPORATION RATE (BUTYL ACETATE = 1): NA  
 PHYSICAL STATE: NA  
 SOLUBILITY IN WATER (% BY WEIGHT): NA  
 pH: NA  
 APPEARANCE AND ODOR: GEOMETRIC SOLID OBJECT

4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA  
 FLAMMABLE LIMITS IN AIR (%): NA  
 LOWER (LEL): NA  
 UPPER (UEL): NA  
 EXTINGUISHING MEDIA: USE WATER, FOAM OR DRY POWDER, AS APPROPRIATE.  
 AUTO-IGNITION: NA  
 SPECIAL FIRE FIGHTING PROCEDURES:  
 AS WITH ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF HAZARDOUS DECOMPOSITION PRODUCTS (SEE SECTION 2).

SPECIAL FIRE EXPLOSION HAZARDS:  
 LIKE ANY SEALED CONTAINER, BATTERY CELLS MAY RUPTURE WHEN EXPOSED TO EXCESSIVE HEAT; THIS COULD RESULT IN THE RELEASE OF FLAMMABLE OR CORROSIVE

5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA  
 EFFECTS OF OVEREXPOSURE:  
 NONE. (IN FIRE OR RUPTURE SITUATION SEE SECTION 2 AND SECTION 4)  
 EMERGENCY FIRST AID PROCEDURES:  
 SKIN AND EYES:  
 IN THE EVENT THAT BATTERY RUPTURES, FLUSH EXPOSED SKIN WITH COPIOUS QUANTITIES OF FLOWING LUKEWARM WATER FOR A MINIMUM OF 15 MINUTES. GET IMMEDIATE MEDICAL ATTENTION FOR EYES. WASH SKIN WITH SOAP AND WATER.  
 SWALLOWING:  
 INGESTION OF A BATTERY CAN BE HARMFUL. CALL THE NATIONAL CAPITAL POISON CONTROL CENTER (202-625-3333 - COLLECT) OR YOUR LOCAL POISON CONTROL CENTER (800-222-1222), DAY OR NIGHT - FOR ADVICE AND FOLLOW-UP.  
 FOR MORE INFORMATION, VISIT: HTTP://WWW.NEMA.ORG/INDEX\_NEMA.CFM/666.

6. REACTIVITY DATA

STABLE OR UNSTABLE: STABLE  
 INCOMPATIBILITY (MATERIALS TO AVOID): NA  
 HAZARDOUS DECOMPOSITION PRODUCTS: NA  
 DECOMPOSITION TEMPERATURE (0 DEG. F): NA  
 HAZARDOUS POLYMERIZATION: WILL NOT OCCUR  
 CONDITIONS TO AVOID: AVOID ELECTRICAL SHORTING.

7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS:  
 IN THE EVENT OF A BATTERY RUPTURE, PREVENT SKIN CONTACT AND COLLECT ALL RELEASED MATERIAL IN A PLASTIC LINED METAL CONTAINER.  
 REPORTING PROCEDURE:  
 REPORT ALL SPILLS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REPORTING REQUIREMENTS.  
 WASTE DISPOSAL METHOD:  
 WHEN SHREDDED PER TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP) PARAMETERS AND TESTED PER SW 846, 3RD EDITION, TEST METHODS FOR EVALUATING SOLID WASTE, INDEPENDENT CERTIFIED LABORATORY ANALYSES HAVE INDICATED THESE RAYOVAC BATTERY TYPES TO HAVE NO HAZARDOUS WASTE CHARACTERISTICS (PER 40 CFR, PART 261.24) AND CAN BE LANDFILLED IF ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS ARE COMPLIED WITH. TCLP DATA IS AVAILABLE UPON REQUEST. FOR ADDITIONAL INFORMATION ON DISPOSAL OR RECYCLING OPTIONS, VISIT: HTTP://WWW.RAYOVAC.COM/ABOUT/ENVIRONMENTAL/E\_FAQ.SHTML.

8. PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NA  
 VENTILATION:  
 LOCAL EXHAUST: NA  
 MECHANICAL (GENERAL): NA  
 SPECIAL: NA  
 OTHER: NA  
 PROTECTIVE GLOVES: NA  
 EYE PROTECTION: NA  
 OTHER PROTECTIVE CLOTHING: NA

9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE:  
 STORE IN A DRY PLACE. STORING UNPACKAGED CELLS TOGETHER COULD RESULT IN CELL SHORTING AND HEAT BUILD-UP.  
 TRANSPORTATION-SHIPING:  
 THESE ARE "BATTERIES DRY" AND ARE NOT CONSIDERED TO BE A "HAZARDOUS MATERIAL" PER THE DEPT. OF TRANSPORTATION (USDOT) REGULATIONS OR "DANGEROUS GOODS" PER THE INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) REGULATIONS. SHIPMENTS MUST COMPLY WITH THE GENERAL DUTY CLAUSE OF USDOT 49 CFR 172.102 (A) (1) SPECIAL PROVISION 130, "TO PREVENT SHORTING POTENTIAL WHILE TRANSPORTING."

10. SARA 313

NOTIFICATION IS NOT REQUIRED BECAUSE THESE PRODUCTS ARE ARTICLE(S) THAT DO NOT RELEASE A COVERED TOXIC CHEMICAL UNDER THE NORMAL CONDITIONS OF PROCESSING OR USE.

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NA = NOT APPLICABLE

ITEM: 4WT09 - Battery 1.5 V AA Pk24

PICK\_REQ: 1024014618

MATERIAL SAFETY DATA SHEET (MSDS)

MSDS: A6974

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - A6974

MATERIALS.

Associated Grainger Item: 4WT09 - Battery 1.5 V AA Pk24

4WT08, 4WT09, 4WT11, 5U076, 4LW07, 4LW13, 4LV99, 5U813, 3WA30, 3WA31, 3WA32, 3WA33, 3WA34, 2ZB21

RAYOVAC(R\*)

RAYOVAC CORPORATION
601 RAYOVAC DRIVE
MADISON, WI 53711

PHONE: 608-275-3340

FAX: 608-275-4577

HTTP://WWW.RAYOVAC.COM

MATERIAL SAFETY DATA SHEET

1. WE WOULD LIKE TO INFORM OUR CUSTOMERS THAT THESE BATTERIES ARE EXEMPT ARTICLES AND ARE NOT SUBJECT TO THE 29 CFR 1910.1200 OSHA REQUIREMENT, OR TO THE CANADIAN WHMIS REQUIREMENTS AND THE SHEETS ARE SUPPLIED AS A SERVICE TO YOU. FOR OTHER MSDS AND RELATED INFORMATION, VISIT: HTTP://WWW.RAYOVAC.COM/CUSTOMER/MSDS/MSDS.SHTML.

2. THESE BATTERIES ARE SUITABLE FOR LANDFILL DISPOSAL (SEE SECTION 7).

1. IDENTIFICATION

PRODUCT NAME: ALKALINE BATTERIES - "NO MERCURY" FORMULA

SIZES: ALL

EMERGENCY TELEPHONE NUMBER: 800-424-9300 (24 HR, CHEMTREC)

ENVIRONMENTAL HEALTH & SAFETY INFORMATION: 262-523-9000

EDITION DATE: 03/01/2004

APPROVED BY: KEVIN J. DOMACK

2. INGREDIENTS

Table with 4 columns: INGREDIENT NAME, CAS #, %, TLV\*. Rows include MANGANESE DIOXIDE, STEEL, ZINC, POTASSIUM HYDROXIDE, GRAPHITE, BARIUM SULFATE, WATER, PAPER, PLASTIC, OTHER.

\*SOURCE: ACGIH THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS, 2003.

3. PHYSICAL DATA

BOILING POINT @ 760 MMHg (DEG. C): NA

VAPOR PRESSURE (MMHg @ 25 DEG. C): NA

VAPOR DENSITY (AIR = 1): NA

DENSITY (GRAMS/CC): NA

PERCENT VOLATILE BY VOLUME (%): NA

EVAPORATION RATE (BUTYL ACETATE = 1): NA

PHYSICAL STATE: NA

SOLUBILITY IN WATER (% BY WEIGHT): NA

pH: NA

APPEARANCE AND ODOR: GEOMETRIC SOLID OBJECT

4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA

FLAMMABLE LIMITS IN AIR (%): NA

LOWER (LEL): NA

UPPER (UEL): NA

EXTINGUISHING MEDIA: USE WATER, FOAM OR DRY POWDER, AS APPROPRIATE.

AUTO-IGNITION: NA

SPECIAL FIRE FIGHTING PROCEDURES: AS WITH ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF HAZARDOUS DECOMPOSITION PRODUCTS (SEE SECTION 2).

SPECIAL FIRE EXPLOSION HAZARDS: LIKE ANY SEALED CONTAINER, BATTERY CELLS MAY RUPTURE WHEN EXPOSED TO EXCESSIVE HEAT; THIS COULD RESULT IN THE RELEASE OF FLAMMABLE OR CORROSIVE

5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA

EFFECTS OF OVEREXPOSURE: NONE. (IN FIRE OR RUPTURE SITUATION SEE SECTION 2 AND SECTION 4)

EMERGENCY FIRST AID PROCEDURES:

SKIN AND EYES: IN THE EVENT THAT BATTERY RUPTURES, FLUSH EXPOSED SKIN WITH COPIOUS QUANTITIES OF FLOWING LUKEWARM WATER FOR A MINIMUM OF 15 MINUTES. GET IMMEDIATE MEDICAL ATTENTION FOR EYES. WASH SKIN WITH SOAP AND WATER.

SWALLOWING: INGESTION OF A BATTERY CAN BE HARMFUL. CALL THE NATIONAL CAPITAL POISON CONTROL CENTER (202-625-3333 - COLLECT) OR YOUR LOCAL POISON CONTROL CENTER (800-222-1222), DAY OR NIGHT - FOR ADVICE AND FOLLOW-UP.

FOR MORE INFORMATION, VISIT: HTTP://WWW.NEMA.ORG/INDEX\_NEMA.CFM/666.

6. REACTIVITY DATA

STABLE OR UNSTABLE: STABLE

INCOMPATIBILITY (MATERIALS TO AVOID): NA

HAZARDOUS DECOMPOSITION PRODUCTS: NA

DECOMPOSITION TEMPERATURE (0 DEG. F): NA

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: AVOID ELECTRICAL SHORTING.

7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS: IN THE EVENT OF A BATTERY RUPTURE, PREVENT SKIN CONTACT AND COLLECT ALL RELEASED MATERIAL IN A PLASTIC LINED METAL CONTAINER.

REPORTING PROCEDURE: REPORT ALL SPILLS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REPORTING REQUIREMENTS.

WASTE DISPOSAL METHOD: WHEN SHREDDED PER TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP) PARAMETERS AND TESTED PER SW 846, 3RD EDITION, TEST METHODS FOR EVALUATING SOLID WASTE, INDEPENDENT CERTIFIED LABORATORY ANALYSES HAVE INDICATED THESE RAYOVAC BATTERY TYPES TO HAVE NO HAZARDOUS WASTE CHARACTERISTICS (PER 40 CFR, PART 261.24) AND CAN BE LANDFILLED IF ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS ARE COMPLIED WITH. TCLP DATA IS AVAILABLE UPON REQUEST. FOR ADDITIONAL INFORMATION ON DISPOSAL OR RECYCLING OPTIONS, VISIT: HTTP://WWW.RAYOVAC.COM/ABOUT/ENVIRONMENTAL/E\_FAQ.SHTML.

8. PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NA

VENTILATION: LOCAL EXHAUST: NA MECHANICAL (GENERAL): NA SPECIAL: NA OTHER: NA

PROTECTIVE GLOVES: NA

EYE PROTECTION: NA

OTHER PROTECTIVE CLOTHING: NA

9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE: STORE IN A DRY PLACE. STORING UNPACKAGED CELLS TOGETHER COULD RESULT IN CELL SHORTING AND HEAT BUILD-UP.

TRANSPORTATION-SHIPPING: THESE ARE "BATTERIES, DRY" AND ARE NOT CONSIDERED TO BE A "HAZARDOUS MATERIAL" PER THE DEPT. OF TRANSPORTATION (USDOT) REGULATIONS OR "DANGEROUS GOODS" PER THE INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) REGULATIONS. SHIPMENTS MUST COMPLY WITH THE GENERAL DUTY CLAUSE OF USDOT 49 CFR 172.102 (A) (1) SPECIAL PROVISION 130, "TO PREVENT SHORTING POTENTIAL WHILE TRANSPORTING."

10. SARA 313

NOTIFICATION IS NOT REQUIRED BECAUSE THESE PRODUCTS ARE ARTICLE(S) THAT DO NOT RELEASE A COVERED TOXIC CHEMICAL UNDER THE NORMAL CONDITIONS OF PROCESSING OR USE.

NOTICE: THE INFORMATION AND RECOMMENDATIONS SET FORTH ARE MADE IN GOOD FAITH AND ARE BELIEVED TO BE ACCURATE AT THE DATE OF PREPARATION. RAYOVAC CORPORATION MAKES NO WARRANTY EXPRESSED OR IMPLIED.

NA = NOT APPLICABLE



DATE 02-02-98

EMERGENCY TELEPHONE NUMBER  
(605) 232-4311

**PRODUCT IDENTIFICATION:**

**Material No.:** 1006

**Material Name:** Cork Insulation Tape

**Material Description:** Mixture of polymers, resins, and inert filler

**WARNING STATEMENT:**

Non-Hazardous Material.

**PRECAUTIONARY MEASURES:**

Normal chemical hygiene should be adequate to handle this material.  
Wash thoroughly after handling, avoid contact with eyes, do not ingest.

**HAZARDOUS INGREDIENTS:**

<u>Material Name/CAS #</u>	<u>%</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Contains no hazardous ingredients			

This MSDS is prepared to comply with OSHA Hazard Communication Standard 29 CFR 1910.1200. Unlisted Ingredients are not "hazardous" per this OSHA standard and are considered to be trade secrets.

**EMERGENCY AND FIRST AID PROCEDURES:**

**FIRST AID:**

**Ingestion:** Seek medical advice.

**Skin:** Wash with soap and water

**Eyes:** Flush with water for 15 minutes, contact physician.

**OTHER EMERGENCIES:**

**In case of fire:** Extinguish with water, carbon dioxide, foam, or dry chemical.

**Spill or leak:** Material poses no special threat if spilled or leaked.

**OCCUPATIONAL CONTROL PROCEDURES:**

**Eye Protection:** Not normally required; although the use of safety glasses is a good industrial practice.

**Skin Protection:** Not normally required.

**Respiratory Protection:** Not normally required.

**Ventilation:** Mechanical (general)

**FIRE PROTECTION:**

**Flash point/method:** 365°F / COC

**Appropriate Extinguishers:** Water, carbon dioxide, foam, dry chemical

**Special Fire Fighting Procedures:** Wear self-contained breathing apparatus.

**Unusual Fire and Explosion Hazard:** None known

**REACTIVITY DATA:**

**Stability:** Stable

**Incompatibility:** Strong acids, alkalis, and oxides

**Hazardous Decomposition Products:** Carbon oxides and unidentified organic compounds when burning.

**Hazardous polymerization:** Will not occur

**EFFECT OF OVER EXPOSURE:**

**Eyes:** Mechanical irritation

**Skin:** None Expected

**Inhalation:** Not applicable

**Chronic:** No known effects

**Existing Health Conditions Affected by Exposure:** No known conditions are aggravated by exposure to this product.

<b>CARCINOGENICITY:</b>	<b>NTP?</b>	<b>IARC?</b>	<b>OSHA?</b>
	No	No	No



# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### Product Identification

Product Name: Bramec Corporation Thum-Gum  
Product Number: 1003, 1004

### Company Identification

Bramec Corporation  
403 Hwy 105  
North Sioux City, SD 57049 USA  
1-605-232-4311 (For product information)  
1-605-232-4311 (For emergencies)

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

### COMPONENT LISTING:

<u>Chemical Name</u>	<u>Amount</u>	<u>CAS Number</u>
Bramec Corporation Thum-Gum	100.0 %	

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

### COMPOSITION COMMENT:

The balance of the components are considered non-hazardous.

### HAZARDS DISCLOSURE

This product contains no known hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains no known hazardous materials.

## 3. HAZARDS IDENTIFICATION

HMIS Rating -           Health: 1  
                          Flammability: 0  
                          Reactivity: 0



(section 3 continued)

#### **POTENTIAL HEALTH EFFECTS**

##### **EYE:**

May be slightly irritating.

##### **SKIN:**

May cause slight skin irritation.

##### **INHALATION:**

No hazards expected in normal industrial use at room temperature.

##### **INGESTION:**

May be harmful if swallowed.

##### **CARCINOGENICITY INFORMATION:**

No known cancer hazards.

#### **4. FIRST AID MEASURES**

##### **EYE CONTACT FIRST AID:**

Flush eye with water for 15 minutes.

##### **SKIN CONTACT FIRST AID:**

Wash with soap and water.

##### **INHALATION FIRST AID:**

No specific treatment is necessary since this material is not likely to be hazardous by inhalation.

##### **INGESTION FIRST AID:**

Do not induce vomiting. Contact a physician.

#### **5. FIRE FIGHTING MEASURES**

##### **FLAMMABLE PROPERTIES**

COC Flash Point: N/A

Autoignition Temperature: N/A

##### **FLAMMABLE LIMITS IN AIR**

LEL: N/A

UEL: N/A

##### **EXTINGUISHING MEDIA:**

Water, carbon dioxide, foam or dry powder.



(section 5 continued)

**FIRE & EXPLOSION HAZARDS:**

Will burn if involved in a fire.

**FIRE FIGHTING INSTRUCTIONS:**

As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

**COMBUSTION PRODUCTS:**

The combustion products from Polymer and Petroleum By-products, like those from most materials, Must be considered Toxic.

**6. ACCIDENTAL RELEASE MEASURES**

**SAFEGUARDS (PERSONNEL):**

Eliminate all sources of ignition - heat, sparks, flame, electricity, impact and friction.

**INITIAL CONTAINMENT:**

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

**SMALL SPILLS PROCEDURE:**

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

**7. HANDLING AND STORAGE**

**RECOMMENDED STORAGE TEMPERATURE**

Minimum: -17.8 C (0.0 F)  
Maximum: 48.9 C (120.0 F)

**SHELF LIFE: (in original, sealed containers)**

1 year @ -17.8 C  
1 year @ 48.9 C

**HANDLING (PERSONNEL):**

Use care in handling/storage. Wash hands thoroughly after handling.

**HANDLING (PHYSICAL ASPECTS):**

Store in a cool dry area.

**STORAGE PRECAUTIONS:**

Protect containers from physical damage.



## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### ENGINEERING CONTROLS:

No special ventilation requirements.

### EYE / FACE PROTECTION REQUIREMENTS:

Wear safety glasses.

### SKIN PROTECTION REQUIREMENTS:

For brief contact, normal work attire should be sufficient.

### RESPIRATORY PROTECTION REQUIREMENTS:

Under normal use conditions, with adequate ventilation, no special handling equipment is required.

### EXPOSURE GUIDELINES:

No Information Available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM .....	Solid
COLOR .....	Gray
ODOR .....	No odor
SOLUBILITY IN WATER .....	Nil
SPECIFIC GRAVITY .....	1.8 (Water = 1)
% VOLATILES .....	0 %
VOLATILE ORGANIC COMPOUNDS (VOC) ...:	0

## 10. STABILITY AND REACTIVITY

### STABILITY:

Stable.

### POLYMERIZATION:

Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

No information available.

## 12. ECOLOGICAL INFORMATION

No information available.



**13. DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL:**

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

**14. TRANSPORTATION INFORMATION**

PRODUCT LABEL ...: Bramec Corporation Thum-Gum

**15. REGULATORY INFORMATION**

**WHMIS Hazard Symbols:**

None

**16. OTHER INFORMATION**

REASON FOR ISSUE ...: Old MSDS outdated  
APPROVAL DATE .....: August 1, 2003  
SUPERCEDES DATE ....: August 1, 2003

**ADDITIONAL INFORMATION:**

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process.

\*\*\*\*\*  
This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Bramec Corporation. The data on this sheet are related only to the specific material designated herein. Bramec Corporation assumes no legal responsibility for use or reliance upon these data.

\*\*\*\*\*  
**END OF MSDS**  
\*\*\*\*\*



**PHYSICAL DATA:**

**Physical State:** Black Solid

**Specific Gravity:** 1.2 @ 77°F

**SPILL, LEAK & DISPOSAL INFORMATION:**

**Spill or Leak Procedure:** Sweep or scrape up and place in appropriate container for disposal.

**Waste Disposal:** Observe all Federal, State and Local regulations when disposing of the material. For assistance contact the District Director of the Environmental Protection Agency, local hazardous waste regulations may apply if they are different from the federal regulations. Dispose of in an approved industrial landfill.

**Storage:** Store away from excessive heat and open flames.

**EPA INFORMATION:**

**SARA Title III sections 313 and 302:** Contains no listed materials

**CERCLA:** Contains no listed materials

**DOT Shipping Name:** Caulking compound NOIBN

The above information is based on MSDS's provided by the suppliers of the raw materials used in this product.



5332 Dansher Road  
Countryside, Illinois 60525

## MATERIAL SAFETY DATA SHEET

Revision Date: 2-01-00

MSDS No. N001

Emergency Phones: 708-579-8100 (NYCO)

800-424-9300 (CHEMTREC)

PLEASE NOTE: This MSDS is being provided to your company for the purpose of providing current health and safety information to your management and for your employees who work with this material. Please read the information on these sheets, and then provide this information to those people at your company whose responsibility it is to comply with FEDERAL and STATE RIGHT-TO-KNOW regulations. Also make this information available to any employee who requests it. It is your obligation to comply with these regulations.

### SECTION I - PRODUCT IDENTITY

**PRODUCT NAME: NYCO Calci-Solve**

Formula: Mixture, Hydrochloric Acid and additives in water.

Chemical Type: Inorganic Acid

#### HMIS RATINGS

Health = 3 (Serious)	Flammability = 0 (Insignificant)
Reactivity = 0 (Minimal)	Protection = D (Face Shield, Gloves, Synthetic Apron)

### SECTION II - HAZARDOUS INGREDIENTS

	PERCENT	TLV	CARCINOGEN (OSHA,TP,IARC)
Hydrochloric Acid CAS No. 7647-01-0)	> 30%	5 ppm ceiling vapor	no
Water (CAS No. 7732-18-5)	< 70%		
Acid Inhibitor (proprietary)	< 1%		

### SECTION III - CHEMICAL AND PHYSICAL

Appearance: Red Liquid	Boiling Point: EST 180°F.
Odor: Muriatic acid	Melting Point: N/A
pH: <1	Spec. Gravity (H <sub>2</sub> O = 1): 1.16
Water Solubility: Completely	Vapor Pressure (mm Hg): 39
Viscosity, Cp. @ 25°C: A-5 (Gardner)	VOC Content: none (N.A.)

### SECTION IV - FIRE AND EXPLOSION HAZARDS

Flash Point (Method): none	Explosion Limits:	Upper: N/A
		Lower: N/A

Extinguishing Media: N/A (product is non-flammable)

Special Firefighting Procedures and Hazards: Avoid skin and eye contact, and breathing of acid vapors. Wear head and body protection and HCl respirator if exposure to liquid is likely.

### SECTION V - REACTIVITY INFORMATION

Stable:  Unstable:

**Precautions:**

Incompatibility: strong alkalis, materials not resistant to strong acids, active metals (zinc, aluminum, magnesium, etc.).

Hazardous Decomposition Products: Hydrogen chloride vapors. Contact with active metals can release flammable gas

Hazardous Polymerization: Occurs:

Does Not Occur: X

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# MATERIAL SAFETY DATA SHEET

## SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Company Name</b> Nu-Calgon Wholesaler, Inc.	<b>Phone Number</b> (314) 469-7000 / (800) 554-5499	<b>CHEMTREC</b> (800) 424-9300		
<b>Street Address</b> 2008 Altom Court	<b>City</b> St. Louis	<b>State</b> MO	<b>Postal Code</b> 63146-4151	<b>Last Update</b> 2/1/07
<b>Product Name</b> Rx11-flush	<b>Product Number</b> 4300-11	<b>Product Use</b> Air Conditioning & Refrigerant System Flush.		<b>EPA Registration #</b> N/A

## SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

<b>Hazardous Ingredients</b>	<b>% By Wt.</b>	<b>CAS Number</b>	<b>TLV</b>	<b>PEL</b>
Tetrafluoroethane	10.0-20.0	811-97-2	1000 ppm TWA	1000 ppm STEL AEL: 1000 ppm TWA
1,1,1,2,3,4,4,5,5,5-decafluoropentane	5.0-25.0	138495-42-8	None Established	None Established AEL: 200 ppm, 8 & 12 hr. TLV 400 ppm ceiling
Trans,1,2-dichloroethylene	40.0-60.0	156-60-5	200 ppm STEL, 8 hour TWA	200 ppm, 790 mg/m <sup>3</sup> , 8 hour TWA. AEL: 200 ppm, 8 & 12 hour TWA
Ethyl Alcohol	02.0-06.0	64-17-5	1,000 ppm	1,000 ppm
1,1,1,3,3,Pentafluorobutane	10.0-30.0	406-58-6	None Established	None Established AEL 200 ppm TWA

## SECTION 3 – HAZARD IDENTIFICATION

**Emergency Overview:** Colorless azeotropic liquid with a slight ethereal odor. This product is nonflammable. Liquid will irritate eyes and skin under repeated or prolonged exposure. Product vapors displace air and can cause asphyxiation especially in confined spaces.

### **Potential Health Effects**

**Eyes:** Moderate irritation. Persons wearing contact lenses should wear chemical protective safety glasses when exposed to this product.

**Skin:** For repeated contact: dry/chapped skin, risk of chronic dermatitis.

**Ingestion:** Harmful if swallowed. Irritating to the mouth, throat and stomach.

**Inhalation:** Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse or deliberate inhalation may cause death without warning.

**Chronic Exposure:** No Data.

**Carcinogenicity:** None of the components present in this material are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

**Medical Conditions Aggravated by Exposure:** Preexisting disease of the heart, lungs, skin and eyes.

## SECTION 4 – FIRST AID MEASURES

**Eyes:** Immediately flush with water. Remove any contact lenses and continue flushing for 15 minutes, lifting eyelids occasionally until no evidence of the chemical remains. If irritation develops or persists call a physician.

**Skin:** Wash promptly with soap and water. Remove contaminated clothing and shoes and replace with clean clothing.

**Ingestion:** DO NOT induce vomiting. Immediately give two glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

**Inhalation:** Remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

## SECTION 5 – FIREFIGHTING MEASURES

**Flash Point:** Not flammable per Tag Closed Cup (ASTM D 56) and Pensky-Martins Closed Cup (ASTM D 93).°C/ °F

**Autoignition Temp:** No Data.°C/No Data.°F

**Hazardous Products of Combustion:** No Data.

**Flammable Limits in Air:** LEL/UEL: 4.3 - 13.5 (% by volume)

**Extinguishing Media:** CO2, dry chemical, water spray, water fog

**Fire and Explosion Hazards:** No Data.

**Special Firefighting Procedures:** Evacuate personnel. Wear self contained breathing apparatus (SCBA) and full protective equipment. Containers generate pressure when heated causing violent bursting and dangerous propelling of container. May form toxic decomposition products above 480o F/ 250o C.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

**Spill or Leak:** Evacuate area, absorb spilled liquid with commercial, nonflammable absorbent i.e. sand, vermiculite. Remove unprotected personnel. Protected personnel should remove ignition sources and shut off fire sources. Provide ventilation. Shovel (spark proof) absorbent material into drums and close. Do not flush to sewer.

## SECTION 7 – HANDLING AND STORAGE

**Handling Procedures and Equipment:** Avoid breathing vapors or mist. Use only with adequate ventilation. Avoid repeated or prolonged contact with eyes, skin or clothing. Wash thoroughly after handling.

**Storage Requirements:** Do not store in direct sunlight. Store in cool dry place, away from heat, sparks or flames which may generate toxic decomposition products. Vapors are heavy and may concentrate in low poorly ventilated areas. Keep away from children.

## SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

**Respiratory Protection:** Use only with adequate ventilation. Keep container tightly closed. Use approved NIOSH self-contained or supplied air respirators for emergencies and in situations where air may be displaced by vapors.

**Eye Protection:** Use chemical protective safety glasses.

**Protective Clothing:** Where there is potential for skin contact, use appropriate impervious gloves, apron, pants and jacket.

**Exposure Guidelines:** Applicable Exposure Limits See Section 2.

**Specific Engineering Controls (such as ventilation, enclosed process):** No Data.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical Form:</b> liquid	<b>Freezing Point:</b> No Data.°C/No Data.°F	<b>% Volatile by Weight:</b> 100%
<b>Color:</b> Clear colorless	<b>Vapor Density [air =1]:</b> 3.4	<b>Evaporation Rate:</b> (ether = 1):>1
<b>Odor:</b> Slight Ethereal	<b>Vapor Pressure:</b> 5.5 psia at 20o C /77o F	<b>Specific Gravity:</b> No Data.
<b>Boiling Point:</b> 41°C/106°F	<b>Solubility in Water:</b> 0.4%	<b>pH (concentrate):</b> No Data.

## SECTION 10 – STABILITY AND REACTIVITY

**Chemical Stability:** Material is stable.

**Hazardous Polymerization:** Will not occur.

**Incompatibilities:** Alkali or alkaline earth metals powdered Al, Zn, Be, Na, Mg, etc. Incompatible w/strong bases such as NaOH, KOH, etc.

**Reactive Conditions to avoid:** No Data.

**Decomposition Products:** Decomposes with heat. High temperatures (open flame, glowing metal surfaces, etc.) can decompose forming hydrofluoric acid and possibly carbonyl fluoride. This material is incompatible with strong bases and can react to form salts of hydrofluoric acid and unsaturated compounds of unknown toxicity.

## SECTION 11 – TOXICOLOGICAL INFORMATION

### Hazardous Ingredients

This material is currently undergoing chronic toxicity testing. 1,1,1,2,3,4,4,5,5,5-decafluoropentane: Oral LD50>5,000 mg/kg in rats. Dermal ALD > 5,000 mg/kg in rabbits. Inhalation, 4 hour LC50: 11,100 ppm in rats. Animal testing indicates that 1,1,1,2,3,4,4,5,5,5-decafluoropentane is a slight skin irritant and a mild eye irritant, but is not a skin sensitizer. Single exposure to 5,000 ppm by inhalation caused tremors. No cardiac sensitization was observed. A different single exposure study by inhalation in rats caused incoordination, hyperactivity and prostration; pathological examination of rats from this study revealed kidney and lung changes and external hair loss. Repeated exposures to 1,900-3,500 ppm caused tremors or convulsions, behavioral effects, and altered clinical chemistry. These effects were temporary. In a different repeated exposure test the No Observed Adverse Effect Level (NOAEL) for convulsions was 1,000 ppm. Results indicate convulsions is an acute effect of 1,1,1,2,3,4,4,5,5,5-decafluoropentane. The 90 day NOAEL is 500 ppm. In animal testing this material produced developmental effects only at exposure levels producing other toxic effect in the adult animal. No animal data are available to define the carcinogenic or reproductive hazards of this material. Tests have shown that 1,1,1,2,3,4,4,5,5,5-decafluoropentane does not cause genetic damage in bacterial mammalian cell cultures. It has not produced genetic damage in tests on animals. Trans,1,2-dichloroethylene (t-DCE): A severe eye irritant and a moderate to severe skin irritant. Single and repeated exposure by ingestion caused increased kidney weight, histopathological changes of the lungs, liver effects, decreased motor activity, pulmonary edema, cardiovascular system changes, and mortality. Single and repeated exposure to t-DCE by inhalation caused pathological changes of the liver and lungs, inactivity/anaesthesia, altered white blood cell count, cardiovascular system changes and weak cardiac sensitization, a potentially fatal disturbance of the heart rhythm caused by heightened sensitivity to the action of epinephrine. Long term exposure caused altered liver and lung function. A Dec. 1998 inhalation study conducted with 99.45 pure t-DCE produced no adverse, compound related effects. The NOEL was 4,000ppm. Exposure of pregnant rats shows maternal toxicity at 2,000, 6,000 & 12,000ppm. Developmental toxicity was seen only at 12,000 ppm. Tests have shown that T-DCE does not cause genetic damage in bacterial or mammalian cell cultures. No animal data are available to define the carcinogenic or reproductive hazards of t-DCE. 1,1,1,3,3,3-Pentafluorobutane: No Federal OSHA PEL (29 CFR 1919.1000) or ACGIH TLV values are established for this chemical. The manufacturer of this material (Solvay) has established an AEL as an 8 hour & 12 hour TWA of 500 ppm. Where governmentally imposed occupational exposure limits which are lower than the above AEL are in effect, such limits shall take precedence.

## SECTION 12 – ECOLOGICAL INFORMATION

<u>Hazardous Ingredients</u>	<u>Aquatic Toxicity Data</u>
1,1,1,2,3,4,4,5,5,5-decafluoropentane:	96 hour LC50 in fathead minnows: 27.2 mg/L 96 hr LC50 in rainbow trout: 13.9 mg/L 48 hour LC50 in Daphnia magna: 11.7 mg/L
1,1,1,3,3,3-Pentafluorobutane:	96 hour LC50 in Zebra fish : >200 mg/L 48 hour NOEC in Daphnia magna: >200 mg/L 72 hour NOEC in Algae: 113 mg/L
Trans,1,2-dichloroethylene:	96 hour LC 50 in bluegill sunfish: 1350 mg/L 48 hour LC50 in Daphnia magna: 220 mg/L

## SECTION 13 – DISPOSAL CONSIDERATIONS

**Waste Disposal:** Reclaim by distillation or remove to a permitted waste disposal facility. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations.

## SECTION 14 – TRANSPORTATION INFORMATION

**Special Shipping Information:** No Data.

<u>Purview</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
<b>DOT</b> (Land)	Consumer Commodity	No Data.	No Data.	ORM-D
<b>IMO</b> (Water)	No Data.	No Data.	No Data.	No Data.
<b>ICAO</b> (Air)	Aerosols Nonflammable NOS Hazard Label: Nonflammable Gas	1950	N/A, Pkg.Instr.203	2.2

## SECTION 15 – REGULATORY INFORMATION

<b>WHMIS Classification:</b> (Workplace Hazardous Material Information System)	Class A
<b>SARA Title III:</b> (Superfund Amendments & Reauthorization Act)	Acute Yes; Chronic No; Fire No; Reactivity No; Pressure No
<b>OSHA:</b> (Occupational Safety & Health Administration)	No Data.
<b>TSCA:</b> (Toxic Substance Control Act)	No Data.
<b>VOC:</b> (volatile Organic Compounds)	Contains 367 grams/liter Volatile Organic Compounds.
<b>CPR:</b> (Canadian Controlled Products Regulations)	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations.
<b>EINECS:</b> (European Inventory of Existing Commercial Chemical Substances)	No Data.
<b>DSL / NDSL:</b> (Canadian Domestic Substance List)(Non-Domestic Substance List)	No Data.
<b>CERCLA:</b> (Comprehensive Response Compensation & Liability Act)	No
<b>IDL:</b> (Canadian Ingredient Disclosure List)	No Data.
<b>NFPA (HMIS) Rating:</b> (Hazardous Materials Identification System)	Health 1 Flammability 0 Reactivity 1

## SECTION 16 – OTHER INFORMATION

No Data.

The information contained herein is based on the data available to us and is believed to be correct. However, Nu-Calgon Wholesaler Inc. makes no warranty, expressed, or implied, regarding the accuracy of this data or the results to be obtained from the use thereof. Nu-Calgon Wholesaler Inc. assumes no liability for injury from the use of the product described herein.

# MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29CFR 1910.1200

Rev. 01/02/04

**LEAD-FREE ALLOY**

**100% WATERSAFE**

**CANFIELD TECHNOLOGIES INC**  
**1 CROSSMAN ROAD**  
**SAYREVILLE, NJ 08872**

Phone No. 732-316-2100  
Infotrac Emergency No. 1-800-535-5053

## 1. PRODUCT INGREDIENTS

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Weight %</u>	<u>Permissible Concen.(mg/cu.m.)</u>		<u>SARA Title III Sect.313Chem</u>
			<u>OSHA</u>	<u>ACGIH</u>	
TIN	7440-31-5	>90%	2.0	2.0	NO
COPPER	7440-50-8	<5%	.1	.1	NO
SILVER	7440-22-4	<2%	.1	.1	NO
ANTIMONY	7440-36-0	<2%	0.5	0.5	NO

## 2. PHYSICAL DATA

Material is **SOLID** Appearance and Odor **SILVER-WHITE METAL, ODORLESS, VARIOUS SHAPES AND SIZES**

Melting Point **APPROX 430°F** Boiling Point **<4000°F** Specific Gravity **APPROX. 7.1** Vapor Density **N/A**

Solubility in Water **INSOLUBLE** Vapor Pressure **N/A** Evaporation Rate **N/A** PH **N/A**

## 3. FIRE AND EXPLOSION DATA

Flash Point **N/A** Flammable Limits **N/A** Auto Ignition Temp. **N/A**

Unusual Fire and Explosion Hazards  
**IN EXTREMELY HIGH TEMPERATURE FIRE OR IN CONTACT WITH CERTAIN ACIDS, MAY EMIT TOXIC FUMES. USE SELF-CONTAINED RESPIRATORY SYSTEM.**

Fire Extinguishing Agents Recommended  
**USE CO2 OR DRY CHEMICAL ON SURROUNDING FIRE.**

Fire Extinguishing Agents to Avoid  
**DO NOT USE WATER ON FIRE WHERE MOLTEN METAL IS PRESENT.**

Special Fire Fighting Precautions  
**USE NIOSH/MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS AND FULL BODY PROTECTIVE CLOTHING.**

NFPA Codes: Health 1, Flammability 0, Reactivity 0, Other 0  
HMIS Codes: Health 1, Flammability 0, Reactivity 0, Other 0

#### 4. HEALTH HAZARD INFORMATION

##### Primary Routes of Entry

INGESTION                      X INHALATION                      ABSORPTION

##### Carcinogenicity

THIS PRODUCT HAS NOT BEEN LISTED AS A SUSPECT CARCINOGEN BY NTP, IARC OR OSHA. THIS PRODUCT CONTAINS LESS THAN .02% LEAD.

##### Acute Overexposure (symptoms and effects)

SEVERE SHORT-TERM OVEREXPOSURE MAY LEAD TO CENTRAL NERVOUS SYSTEM DISORDERS. CHARACTERIZED BY FEVER, BODYACHE AND CHILLS. IT SHOULD BE RECOGNIZED THAT EXPOSURE OF THIS MAGNITUDE IN AN INDUSTRIAL ENVIRONMENT IS EXTREMELY UNLIKELY.

##### Chronic Overexposure (symptoms and effects)

PROLONGED EXPOSURE TO FUMES OF MOLTEN METAL OR FLUX USED DURING SOLDERING OPERATION MAY CAUSE IRRITATION OF THE RESPIRATORY TRACT.

##### Medical Conditions Possibly Aggravated by Exposure

THE SYMPTOMS OF IMPAIRED PULMONARY FUNCTIONS OR ILLNESS MAY BE WORSENERD BY FUME IRRITANTS.

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#### 5. PRECAUTIONS/PROCEDURES

OVERHEATING OF ALLOY CAN PRODUCE METAL FUMES AND OXIDES. MACHINING OPERATIONS SUCH AS GRINDING, SAWING OR BUFFING CAN GENERATE AIRBORN PARTICULATES IN THE WORK AREA. EXPOSURE LEVELS INDICATED IN SECTION 1 ARE RELEVANT TO THESE AND OTHER OPERATIONS.

##### Normal Handling

USE OF APPROVED RESPIRATORS IS REQUIRED FOR APPLICATIONS WHERE ADEQUATE VENTILATION CANNOT BE PROVIDED. ACTIVITIES WHICH GENERATE EXCESSIVE DUST OR FUMES SHOULD BE AVOIDED.

##### Spill or Leak

ANY METHOD THAT KEEPS DUST TO A MINIMUM IS ACCEPTABLE. VACUUMING IS PREFERRED. USE OF APPROVED RESPIRATORY PROTECTION WHERE POSSIBILITY OF DUST/FUME EXPOSURE EXISTS. DO NOT USE COMPRESSED AIR FOR CLEANING.

##### Personal Hygiene

AVOID INHALATION OR INGESTION. PRACTICE GOOD HOUSEKEEPING AND PERSONAL HYGIENE PROCEDURES.

##### Engineering Controls

LOCAL EXHAUST VENTILATION IS RECOMMENDED FOR DUST AND/OR FUME GENERATION OPERATIONS WHERE AIRBORN EXPOSURES MAY EXCEED PERMISSIBLE AIR CONCENTRATIONS.

##### Storage

GENERAL STORAGE PROCEDURES ACCEPTABLE.

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#### 6. PERSONAL PROTECTIVE EQUIPMENT

##### Respiratory Protection

USE NIOSH/MSHA APPROVED RESPIRATORS OR AIR SUPPLIED RESPIRATOR WHEN SOLDERING IN A CONFINED SPACE OR WHERE EXHAUST OR VENTILATION DOES NOT KEEP EXPOSURE BELOW TLV.

**Eyes and Face**

**SAFETY GLASSES RECOMMENDED WHERE THE POSSIBILITY OF GETTING DUST PARTICLES IN EYES EXISTS OR WHEN HANDLING MOLTEN METAL.**

**Other Clothing and Equipment**

**GLOVES AND OTHER PROTECTIVE CLOTHING RECOMMENDED TO PROTECT SKIN FROM CONTACT WITH MOLTEN METAL.**

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**7. REACTIVITY DATA**

**Stability: STABLE**

**Conditions to Avoid: NOT APPLICABLE**

**Incompatibility: AVOID STRONG ACIDS, SULFUR AND CHLORINE**

**Hazardous Decomposition Products: REACTION WITH STRONG ACIDS CAN PRODUCE TOXIC ORGANIC OR INORGANIC TIN COMPOUNDS.**

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**8. ENVIRONMENTAL**

**Regulated by DOT? NO**

**Waste Disposal Method**

**TIN AS A PURE METAL AND TIN/COPPER/SILVER/ANTIMONY ALLOYS PRESENT NO PROBLEM FOR DISPOSAL AND ARE, IN FACT, RECOVERED DUE TO THEIR ECONOMIC VALUE.**

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**9. ADDITIONAL INFORMATION**

**Precautions to be taken in handling and storing: NONE**

**Other Precautions: NONE**

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## SECTION VI - HEALTH HAZARDS - PROTECTIVE MEASURES - FIRST AID

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- Inhalation:** Breathing of vapor can cause respiratory irritation and inflammation. Breathing of mist or liquid can cause burns. Wear approved HCl vapor/mist respirator if exposure is likely. Remove to fresh air. Give artificial respiration or oxygen if needed. Get prompt medical attention.
- Skin:** Corrosive. Causes irritation and burns. Wear acid-resistant protective gloves, boots, and clothing. Provide convenient safety showers. Remove contaminated clothing. Flush skin thoroughly with water for 15 minutes. Get medical attention if burns persist.
- Eyes:** Corrosive. Causes eye damage. Wear splash proof goggles. Provide convenient eyewash stations. Flush immediately with water for 15 minutes. Get prompt medical attention.
- Ingestion:** Corrosive. Causes irritation and burning in mouth, esophagus, throat and stomach. Avoid swallowing. Drink lots of water or, preferably, milk. Get medical attention if effects persist. Do not induce vomiting.

Most likely routes of entry: Skin, Eyes, Inhalation, Ingestion

Other Important Medical or Precautionary Information: Overexposure to product has the following effects: Inhalation of vapors may cause pulmonary edema, collapse of circulatory system and damage to the upper respiratory system and collapse. Inhalation may cause coughing, throat burning, choking, bronchitis and difficult breathing. Ingestion is harmful and may be fatal. Ingestion may cause burns.

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## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

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Spills and Leaks: Small spills can be flushed into normal drainage or into ground with copious amounts of water, or taken up with absorbent material. Larger spills should be contained by diking or other methods and held for collection and/or reuse, or for neutralization with alkali before collection & disposal. People should use eye and skin protection & respirator.

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Storage and Handling: Check daily for any leaks from containers, vessels, pumps, and piping. Have water hoses and alkali (caustic soda, lime, etc.) convenient. Only use containers and equipment designed for acid service.

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Waste Disposal: If neutralized, may be disposable in sewers if local regulations permit. Otherwise, send to licensed treatment and disposal facility. As supplied, this product is a RCRA hazardous waste.

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Empty Containers: Rinse well before handling and disposal.

Other Precautions: Areas of use and storage should be ventilated adequately to reduce vapors below odor level.

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## SECTION VIII - REGULATORY INFORMATION

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Reportable for SARA Title III, S.313 (Form R): Hydrochloric acid

The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, NYCO Products Company cannot give any guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.



# MATERIAL SAFETY DATA SHEET

Rev. 01/02/03

PRODUCT NAME: SIL-CAN 0, Premium, 5, 6 and 15

CANFIELD TECHNOLOGIES INC  
1 CROSSMAN ROAD  
SAYREVILLE, NJ 08872

Phone: 732-316-2100  
Infotrac Emergency No. 1-800-535-5053

## 1. PRODUCT IDENTIFICATION

Trade Names/Synonym: Sil-can 0, Premium, 5, 6 and 15  
Chemical Name: Silver, Copper, Phosphorus  
Chemical Family: Metal Alloys  
Chemical Formula: Ag/Cu/P

## 2. HAZARDOUS COMPONENTS

<u>Name</u>	<u>Cas No.</u>	<u>%</u>	<u>PEL</u>	<u>TLV</u>
Copper	7440-50-8	74.75-92.6	Fume: 0.1mg/m <sup>3</sup> Dusts: 1 mg./m <sup>3</sup>	Fume:02mg/m <sup>3</sup> Dusts:1 mg./m <sup>3</sup>
Phosphorus	7723-14-0	5.0-7.25	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
Silver	7440-22-4	0.9-18.0	0.01 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>

## 3. CHEMICAL AND PHYSICAL PROPERTIES

Melting Point: 1190°F 645°C  
Vapor Pressure: N/A  
Vapor Density: N/A  
Specific Gravity: 7.86-8.44  
Solubility(H<sub>2</sub>O): Insoluble  
Percent Volatiles: N/A  
Evaporation Rate: N/A  
Appearance/Odor: Light copper metal of wire, rod, strip, powder or preformed shapes-No Odor

## 4. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: None

FLAMMABLE LIMITS: Lower: N/A Upper: N/A

### FIRE AND EXPLOSION HAZARDS

In finely-divided form, this material may ignite when exposed to flame or by reaction with incompatible materials. Fires or explosions involving this material may release potentially toxic emissions of metal, metal oxide and phosphorus fumes.

### EXTINGUISHING MEDIA

Use dry powder. Do not use water.

## **SPECIAL FIRE FIGHTING INSTRUCTIONS**

Use self-contained breathing apparatus with full-face piece operated in pressure-demand or other positive pressure mode.

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## **5. EXPOSURE EFFECTS AND FIRST AID**

### **Route of Exposure – Inhalation**

Inhalation of the components of this material may produce the following:

1. **Silver:** Chronic exposure may produce argyria, a permanent blue-gray discoloration of the skin, eyes, mucous membranes and the respiratory tract.
2. **Copper:** Acute exposure may cause respiratory tract irritation, fever, muscle ache, chills, cough, weakness and a metallic taste. Chronic exposure may cause damage to the liver, kidney, spleen, pancreas and brain.
3. **Phosphorus:** Phosphorus (red form) is stable and relatively non-toxic at room temperature. When heated in the presence of air, it is converted to phosphorus pentoxide, which is corrosive and irritating to eyes, nose, throat and mucous membranes.

### **First Aid – Inhalation**

If signs and symptoms of toxicity are observed, remove subject from contaminated area, administer oxygen and seek medical attention. Keep the subject warm and at rest. Perform artificial respiration if breathing has stopped.

### **Route of Exposure – Skin**

Skin contact with this material in solid forms is not known to be hazardous. In powdered form, skin contact may produce localized irritation, localized argyria (from silver) and/or skin discoloration and contact dermatitis (from copper).

### **First Aid – Skin**

Following repeated or prolonged contact, remove contaminated clothing. Wash affected area with large quantities of water for at least five minutes. Seek medical attention if necessary.

### **Route of Exposure – Eyes**

Exposure of the eyes to this material in powdered form may produce localized argyria, irritation, conjunctivitis and ulceration of the cornea.

### **First Aid - Eyes**

Flush affected areas with water for at least 15 minutes. Seek medical assistance if necessary.

### **Route of Exposure – Ingestion**

Ingestion of this material in finely-divided form may produce gastric irritation, vomiting, abdominal pain, hemorrhage and diarrhea. Long-term chronic ingestion may produce damage to the liver, kidney, spleen, pancreas, skeletal system and brain.

### **First Aid – Ingestion**

If subject is conscious, induce vomiting. If unconscious or convulsive, seek immediate medical assistance.

### **Miscellaneous Toxicological Information**

Neither silver, copper nor phosphorus are classified as potential or demonstrated human carcinogens by IARC, NIOSH, NTP, OSHA or ACGIH.

### **Health Conditions Aggravated By Exposure**

Pre-existing pulmonary diseases (e.g., bronchitis, emphysema) may be aggravated by inhalation exposure to this material, particularly as fume.

---

## 6. REACTIVITY AND POLYMERIZATION

Stability: STABLE

Conditions to Avoid  
STABLE AT ROOM TEMPERATURE.

Incompatible Materials  
ACETYLENE; NH<sub>3</sub>, HNO<sub>3</sub>, AZIDES, ETHANOL, ETHYLENE IMINE, MG, CF<sub>3</sub>, Cl<sub>2</sub>, ClO<sub>2</sub>, ClO, inorganic and organic peroxides, peroxyformic acid, F<sub>2</sub>, permonosulfuric acid, chlorates, CS<sub>2</sub>, SeOCl, SeOF, SeF<sub>4</sub>, bromates, iodates.

Hazardous Decomposition Products  
HEATING AT BRAZING TEMPERATURES MAY LIBERATE OXIDES OF METALS AND PHOSPHORUS (FOR SPECIFIC HAZARDOUS COMPONENTS AND DECOMPOSITION PRODUCTS)

Conditions to Avoid (Polymerization)  
N/A

Hazardous Polymerization:  
Does Not Occur.

---

## 7. SPILL, LEAK & DISPOSAL PROCEDURES

Steps To Be Taken In the Event Of Spills, Leaks or Release  
CLEAN UP SPILLED MATERIAL SO AS TO MINIMIZE DISPERSION OF DUST. WET SWEEPING OR VACUUMING USING HEPA FILTRATION ARE RECOMMENDED METHODS.

Waste Disposal Methods  
RETURN TO MANUFACTURER FOR RECLAIM.

SARA Title III – Hazard Classes: Acute Health Hazard  
Chronic Health Hazard

SARA Title III - Section 313 Supplier Notification:  
This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CAS #	Chemical Name	Percent of Mixture
7440-50-8	Copper	75.75-92.6
7723-14-0	Phosphorus	5.0-7.25
7440-22-4	Silver	0.9-18.0

This information must be included on all MSDS's that are copied and distributed for this material.

Other Environmental Information  
Reportable quantities of the component materials under SARA Title III, Section 313 are as follows:

Silver: 1000 lbs.    Phosphorus: 1 lb.    Copper: 5000 lbs.  
Phosphorus has a "Threshold Planning Quantity" OF 100 lbs.

---

## 8. SPECIAL PROTECTIVE MEASURES

### Ventilation

Use mechanical local exhaust ventilation adequate to maintain airborne concentrations of all components and their decomposition products to within their respective OSHA PELs.

### Eye Protection

Wear eye protection (safety glasses, dust-proof goggles) adequate to prevent eye contact with this material in finely-divided form and to prevent eye injury from the hazards of brazing. Plastic-frame spectacles with side shields and filter lenses (shade #3 or #4) are recommended.

### Skin Protection

Wear appropriate protective gloves and clothing to prevent skin injuries from the hazards of brazing and/or for prolonged or repeated contact with finely-divided material. Avoid flammable fabrics.

### Respiratory Protection

If exposure levels exceed the OSHA PEL, wear a NIOSH/MSHA-approved respirator having a protection factor appropriate to the airborne concentrations of the contaminants generated.

### Other Protection

Brazing alloys may be used with a separately-applied flux which, when heated, may emit irritating and/or toxic gases and fumes. Consult the MSDS for the specific flux in use to determine its hazards and appropriate protective measures. For general guidance, refer to American National Standards Institute (ANSI) Z49.1, "Safety in Welding & Cutting" (American Welding Society, Miami, FL 33135).

### Work/Hygienic Practices

To avoid ingestion of material, wash hands and face before eating, drinking or consumption of tobacco.

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## 9. SPECIAL PRECAUTIONS – STORAGE & HANDLING

DO NOT STORE AT HIGHLY-ELEVATED TEMPERATURES OR IN PROXIMITY TO INCOMPATIBLE MATERIALS.

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## 10. SHIPPING INFORMATION

Hazard Class: Not controlled by DOT, IATA, ICAO or IMO regulations.

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# MATERIAL SAFETY DATA SHEET

01/02/04

## SIL-CAN WHITE CRÈME BRAZING FLUX

**CANFIELD TECHNOLOGIES INC**  
1 CROSSMAN ROAD  
SAYREVILLE, NJ 08872

Phone No. 732-316-2100  
Infotrac Emergency No. 1-800-535-5053

---

### 1. PRODUCT INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS No.</u>	<u>PEL MG/M3</u>	<u>TLV MG/M3</u>
Boric Acid as H3BO3	<51%	10043-35-3	15	10
Potassium Bifluoride	<41%	7789-29-9	2.5	2.5
Water	<26%	7732-18-5	N.L.	N.L.

---

### 2. PHYSICAL DATA

Material is  
SOLID

Appearance and Odor  
Smooth white paste-no odor

Melting Point  
N/A

Boiling Point  
760° mm Hg F

Specific Gravity  
1.54

Vapor Density  
N/A

Solubility in Water  
MODERATE

Vapor Pressure  
N/A

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### 3. FIRE AND EXPLOSION DATA

Nonflammable. Open flame and sparks can ignite combustibles.

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### 4. HEALTH HAZARD INFORMATION

Primary Route of Exposure –  
Inhalation of fumes. Skin or eye contact is also possible.

Possible Effects of Exposure –  
Fumes are irritating to skin, eyes and the respiratory tract.

Emergency First Aid –  
Remove from fume exposure. If breathing has stopped perform artificial respiration. If swallowed, induce vomiting. Never give anything by mouth to an unconscious person. For skin contact, wash with water. For eye contact, immediately flush eyes for 15 minutes with plenty of water. Get medical aid immediately.

Other Health Considerations –  
Fluxes are used with brazing filler metals. When melted, these filler metals may produce fumes, which are hazardous. Filler metals may contain cadmium. Fumes generated during brazing with cadmium alloys may be toxic. Consult the material safety data sheets that pertain to these products.

Carcinogenicity: NTP? No

IARC Monographs? No

OSHA Regulated? No

**NFPA CODES:**

Health 1

Stability 0

Flammability 0

Special 0

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## 5. PRECAUTIONS/PROCEDURES

### Large Spills:

Large spills should be neutralized with a slaked lime-soda ash slurry. Follow Federal, State and Local regulations for disposal.

### Ventilation:

Use enough ventilation to keep the fumes below TLVs in the workers' breathing zone and the general area. Train the employee to keep his head out of the fumes.

### Respiratory Protection:

Use respirable fume respirator or air supplied respirator when brazing in confined space or where local exhaust or ventilation does not keep exposure below TLV.

### Eye Protection:

Wear safety glasses, goggles or use face shield with filter lens of appropriate shade number. Provide protection screens and flash goggles, if necessary, to shield others.

### Protective Clothing:

Wear head and body protection, which help to prevent injury from radiation, sparks, and flame. At a minimum this includes gloves and a protective face shield or goggles and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing.

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# CAIROX<sup>®</sup> Potassium Permanganate

EC- SAFETY DATA SHEET according to Regulation (EC) № 1907/2006 of the European Parliament and of the Council, of 18 December 2006 concerning REACH

Material Safety Data Sheet

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## Section 1 Chemical Product and Company Identification

<b>PRODUCT NAME:</b> CAIROX <sup>®</sup> Potassium permanganate, KMnO <sub>4</sub> <b>TRADE NAME:</b> CAIROX <sup>®</sup> Potassium permanganate <b>SYNONYMS:</b> Permanganic acid potassium salt Potassium permanganate Chameleon mineral Condy's crystals Permanganate of potash	<b>Revision Date: March 2008</b>
<b>USES OF SUBSTANCE:</b> Potassium permanganate is an oxidant recommended for applications that require a strong oxidant.	
<b>COMPANY NAME (US):</b> CARUS CORPORATION	<b>COMPANY ADDRESS:</b> 315 Fifth Street, Peru, IL 61354, USA <b>INFORMATION:</b> (815) 223-1500 (Tel) (815) 224-6816 (FAX) <a href="http://www.caruscorporation.com">www.caruscorporation.com</a> (Web) <a href="mailto:salesmkt@caruscorporation.com">salesmkt@caruscorporation.com</a> (Email) <b>EMERGENCY TELEPHONE:</b> (800) 435-6856 (USA) (815) 223-1500 (Other countries) (800) 424-9300 (Chemtrec, USA) (703) 527-3887 (Chemtrec, Other countries)

## Section 2 Hazards Identification

<p>1. <b><u>EYE CONTACT</u></b> Potassium Permanganate is damaging to eye tissue on contact. It may cause severe burns that result in damage to the eye.</p> <p>2. <b><u>SKIN CONTACT</u></b> Contact of solutions at room temperature may be irritating to the skin, leaving brown stains. Concentrated solutions at elevated temperature and crystals are damaging to the skin.</p> <p>3. <b><u>INHALATION</u></b> Acute inhalation toxicity data are not available. However, airborne concentrations of potassium permanganate in the form of dust or mist may cause damage to the respiratory tract.</p> <p>4. <b><u>INGESTION</u></b> Potassium permanganate, if swallowed, may cause severe burns to mucous membranes of the mouth, throat, esophagus, and stomach.</p>
---

## Section 3 Hazardous Ingredients

<b><u>MATERIAL OR COMPONENT</u></b>	<b><u>CAS NO.</u></b>	<b><u>EINECS</u></b>	<b><u>%</u></b>	<b><u>HAZARD DATA</u></b>
Potassium Permanganate	7722-64-7	231-760-3	>97.5%	<b>PEL/C</b> 5 mg Mn per cubic meter of air  <b>TLV-TWA</b> 0.2 mg Mn per cubic meter of air



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## HAZARD SYMBOLS:



O



Xn



N

## RISK PHRASES:

- 8 Contact with combustibles may cause fire.  
22 Harmful if swallowed.  
50/53 Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment.

## SAFETY PHRASES:

- 60 This material and its container must be disposed of as hazardous waste.  
61 Avoid releases to the environment. Refer to special instructions / Safety data sheet.

## Section 4 First Aid Measures

### 1. EYES

Immediately flush eyes with large amounts of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Do not attempt to neutralize chemically. Seek medical attention immediately.  
**Note to physician:** Soluble decomposition products are alkaline. Insoluble decomposition product is brown manganese dioxide.

### 2. SKIN

Immediately wash contaminated areas with water. Remove contaminated clothing and footwear. Wash clothing and decontaminate footwear before reuse. Seek medical attention immediately if irritation is severe or persistent.

### 3. INHALATION

Remove person from contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

### 4. INGESTION

Never give anything by mouth to an unconscious or convulsing person. If person is conscious, give large quantities of water. Seek medical attention immediately.

## Section 5 Fire Fighting Measures

### NFPA\* HAZARD SIGNS

Health Hazard	1	=	Materials which under fire conditions would give off irritating combustion products. (less than 1 hour exposure) Materials that on the skin could cause irritation.
Flammability Hazard	0	=	Materials that will not burn.
Reactivity Hazard	0	=	Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.
Special Hazard	OX	=	Oxidizer

\*National Fire Protection Association 704 (USA)





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## FIRST RESPONDERS:

Wear protective gloves, boots, goggles, and respirator. In case of fire, wear positive pressure breathing apparatus. Approach incident with caution.

## FLASHPOINT

None

## FLAMMABLE OR EXPLOSIVE LIMITS

Lower: Nonflammable Upper: Nonflammable

## EXTINGUISHING MEDIA

Use large quantities of water. Water will turn pink to purple if in contact with potassium permanganate. Dike to contain. Do not use dry chemicals, CO<sub>2</sub> Halon<sup>®</sup> or foams.

## SPECIAL FIREFIGHTING PROCEDURES

If material is involved in fire, flood with water. Cool all affected containers with large quantities of water. Apply water from as far a distance as possible. Wear self-contained breathing apparatus and full protective clothing.

## UNUSUAL FIRE AND EXPLOSION

Powerful oxidizing material. May decompose spontaneously if exposed to heat (150°C / 302°F). May be explosive in contact with certain other chemicals (Section 10). May react violently with finely divided and readily oxidizable substances. Increases burning rate of combustible material.

## Section 6 Accidental Release Measures

### PERSONAL PRECAUTIONS:

Ensure adequate ventilation. Avoid dust formation. Avoid inhalation and contact with eyes and skin. Personnel should wear protective clothing suitable for the task. Remove all ignition sources and incompatible materials before attempting clean up.

### ENVIRONMENTAL PRECAUTIONS:

Do not flush into sanitary sewer system or surface water. If accidental release into the environment occurs, inform the responsible authorities. Keep the product away from drains, sewers, surface and ground water and soil.

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Clean up spills immediately by sweeping or shoveling up the material. Do not return spilled material to the original container – transfer to a clean metal drum. To clean contaminated surfaces or floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations - if not, collect water and treat chemically (Section 13).

## Section 7 Handling and Storage

### WORK/HYGIENIC PRACTICES

Wash hands thoroughly with soap and water after handling potassium permanganate. Do not eat, drink or smoke when working with potassium permanganate. Wear proper protective equipment. Remove clothing, if it becomes contaminated.

### VENTILATION REQUIREMENTS

Provide sufficient mechanical and/or local exhaust to maintain exposure below the TLV/TWA.

### CONDITIONS FOR SAFE STORAGE

Store in accordance with NFPA 430 requirements for Class II oxidizers. Protect containers from physical damage. Store in a cool, dry area in closed containers. Segregate from acids, peroxides, formaldehyde, and all combustible, organic, or easily oxidizable materials including antifreeze and hydraulic fluid.



# CAIROX<sup>®</sup> Potassium Permanganate

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## Section 8 Exposure Controls and Personal Protection

### RESPIRATORY PROTECTION

In cases where overexposure to dust may occur, the use of an approved NIOSH-MSHA dust respirator or an air supplied respirator is advised. Engineering or administrative controls should be implemented to control dust

### EYE

Faceshield, goggles, or safety glasses with side shields should be worn. Provide eyewash in working area.

### GLOVES

Rubber or plastic gloves should be worn.

### OTHER PROTECTIVE EQUIPMENT

Normal work clothing covering arms and legs, and rubber, or plastic apron should be worn.

## Section 9 Physical and Chemical Properties

<b>APPEARANCE AND ODOR</b>	Dark purple solid with metallic luster, odorless
<b>BOILING POINT, 760 mm Hg</b>	Not applicable
<b>VAPOR PRESSURE (mm Hg)</b>	Not applicable
<b>SOLUBILITY IN WATER % BY SOLUTION</b>	6% at 20°C (68°F) and 20% at 65°C (149°F)
<b>PERCENT VOLATILE BY VOLUME</b>	Not volatile
<b>EVAPORATION RATE</b>	Not applicable
<b>MELTING POINT</b>	Starts to decompose with evolution of oxygen (O <sub>2</sub> ) at temperatures above 150°C (302°F). Once initiated, the decomposition is exothermic and self sustaining.
<b>SPECIFIC GRAVITY</b>	2.7 at 20°C (68°F)
<b>BULK DENSITY</b>	Approximately 1.45 - 1.6 kg / l
<b>VAPOR DENSITY (AIR=1)</b>	Not applicable
<b>OXIDIZING PROPERTIES</b>	Strong oxidizer

## Section 10 Stability and Reactivity

<b>STABILITY</b>	Under normal conditions, the material is stable.
<b>CONDITIONS TO AVOID</b>	Contact with incompatible materials or heat (150°C / 302°F) could result in violent exothermic chemical reaction.
<b>INCOMPATIBLE MATERIALS</b>	Acids, peroxides, formaldehyde, anti-freeze, hydraulic fluids and all combustible organic or readily oxidizable inorganic materials including metal powders. With hydrochloric acid, chlorine gas is liberated.
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	When involved in a fire, potassium permanganate may liberate corrosive fumes.
<b>CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION</b>	Material is not known to polymerize.



# CAIROX<sup>®</sup> Potassium Permanganate

EC- SAFETY DATA SHEET according to Regulation (EC) № 1907/2006 of the European Parliament and of the Council, of 18 December 2006 concerning REACH

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## Section 11 Toxicological Information

### 1. ACUTE TOXICITY

#### INGESTION:

LD 50 oral rat: 780 mg/kg male (14 days); 525 mg/kg female (14 days).

Harmful if swallowed. ALD: 10g. Ingestion may cause nausea, vomiting, sore throat, stomach-ache and eventually lead to a perforation of the intestine. Liver and kidney injuries may occur.

#### SKIN CONTACT:

LD 50 dermal no data available.

The product may be absorbed into the body through the skin. Major effects of exposure: severe irritation, brown staining of skin.

#### INHALATION:

LC 50 inhalation: No data available.

The product may be absorbed into the body by inhalation. Major effects of exposure: respiratory disorder, cough.

### 2. CHRONIC TOXICITY

No known cases of chronic poisoning due to permanganates have been reported. Prolonged exposure, usually over many years, to heavy concentrations of manganese oxides in the form of dust and fumes may lead to chronic manganese poisoning, chiefly involving the central nervous system.

### 3. CARCINOGENICITY

Potassium permanganate has not been classified as a carcinogen by ACGIH, NIOSH, OSHA, NTP, or IARC.

### 4. MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Potassium permanganate solution will cause further irritation of tissue, open wounds, burns or mucous membranes.

## Section 12 Ecological Information

### ENTRY TO THE ENVIRONMENT

Permanganate has a low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble MnO<sub>2</sub>.

### BIOCONCENTRATION POTENTIAL

In non-reducing and non-acidic environments, MnO<sub>2</sub> is insoluble and has a very low bioaccumulative potential.

### AQUATIC TOXICITY

The toxicity data for potassium permanganate is given below:

Rainbow trout, 96 hour LC <sub>50</sub> :	1.8 mg/L
Bluegill sunfish, 96 hour LC <sub>50</sub> :	2.3 mg/L
Milk fish (Chanos Chanos)/ 96 hour LC <sub>50</sub> :	>1.4mg/l

## Section 13 Disposal Considerations



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Offer surplus and non-recyclable product or solutions to a licensed disposal company.

Reduce potassium permanganate in aqueous solutions with sodium thiosulfate, a bisulfite or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Decant or filter and deposit sludge in approved landfill. Where permitted, the sludge may be drained into sewer with large quantities of water. Contact Carus Chemical Company for additional recommendations.

Packaging materials must be triple rinsed to remove all potassium permanganate prior to re-cycling or disposal.

## Section 14 Transport Information

<b>USA (land, D.O.T.)</b>	<b>Proper Shipping Name:</b> 49 CFR172.101....Potassium Permanganate <b>Hazard Class:</b> 49 CFR172.101....Oxidizer <b>ID Number:</b> 49 CFR172.101....UN 1490 <b>Packing Group:</b> 49 CFR172.101....II <b>Division:</b> 49 CFR172.101....5.1
<b>European Labeling in accordance Road/Rail Transport (ADR/RID)</b>	<b>ID Number:</b> UN 1490 <b>ADR/RID Class</b> 5.1 <b>Description of Goods:</b> Potassium Permanganate <b>Hazard Identification No.</b> 50
<b>European Labeling in accordance with EC directive (Water, I.M.O.)</b>	<b>Proper Shipping Name:</b> Potassium Permanganate <b>Hazard Class:</b> Oxidizer <b>ID Number:</b> UN 1490 <b>Packing Group:</b> II <b>Division:</b> 5.1 <b>Marine Pollutant:</b> No
<b>European Labeling in accordance with EC directive (Air, I.C.A.O.)</b>	<b>Proper Shipping Name:</b> Potassium Permanganate <b>Hazard Class:</b> Oxidizer <b>ID Number:</b> UN 1490 <b>Packing Group:</b> II <b>Division:</b> 5.1

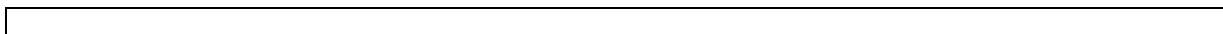
## Section 15 Regulatory Information

### EUROPEAN AND INTERNATIONAL REGULATIONS:

#### MARKINGS ACCORDING TO EU GUIDELINES:

The product has been classified and marked in accordance with EU directives/ordinances on hazardous materials.

<u>CHEMICAL NAME</u>	<u>CAS NO.</u>	<u>EINECS</u>	<u>UN NUMBER</u>
Potassium Permanganate	7722-64-7	231-760-3	UN 1490





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## CODE LETTER AND HAZARD DESIGNATION OF THE PRODUCT:



**O**  
Oxidizer



**Xn**  
Harmful



**N**  
Dangerous to the Environment

## RISK PHRASES:

- 8 Contact with combustibles may cause fire.
- 22 Harmful if swallowed.
- 50/53 Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment.

## SAFETY PHRASES:

- 60 This material and its container must be disposed of as hazardous waste.
- 61 Avoid releases to the environment. Refer to special instructions / Safety data sheet.

## US FEDERAL REGULATIONS:

### CHEMICAL INVENTORY STATUS – PART 1

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>TSCA</u>	<u>EC</u>	<u>Japan</u>	<u>Australia</u>
Potassium Permanganate	7722-64-7	Yes	Yes		

### CHEMICAL INVENTORY STATUS – PART 2 --- CANADA---

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>Korea</u>	<u>DSL</u>	<u>NDSL</u>	<u>PHIL</u>
Potassium Permanganate	7722-64-7	No	Yes		

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR, Canada) and the MSDS contains all of the information required by the CPR.

### FEDERAL, STATE & INTERNATIONAL REGULATIONS – PART 1

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>SARA 302</u>		<u>SARA 313</u>	
		<u>RQ</u>	<u>TPQ</u>	<u>List</u>	<u>Chemical Catg.</u>
Potassium Permanganate	7722-64-7	N/A	N/A	Yes	Yes (Manganese compounds)

### FEDERAL, STATE & INTERNATIONAL REGULATIONS – PART 2

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>CERCLA</u>	<u>RCRA</u>	<u>TSCA 8(d)</u>
Potassium Permanganate	7722-64-7	Yes (RQ =100 lbs)	D001	No

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>CWC</u>	<u>TSCA 12(b)</u>	<u>CDTA</u>	<u>SARA</u>
Potassium Permanganate	7722-64-7	No	No		311/312 4545 Kg

<u>Ingredient</u>	<u>CAS. NO.</u>	<u>Acute</u>	<u>Chronic</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>	<u>Pure/Liquid</u>
Potassium Permanganate	7722-64-7	Yes	Yes	Yes	No	No	Pure



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<u>Ingredient</u>	<u>CAS. NO.</u>	<u>Australian Hazchem Code</u>	<u>Poison Schedule</u>	<u>WHMIS</u>
Potassium Permanganate	7722-64-7			C, D2B

## Section 16 Other Information

NIOSH	National Institute for Occupational Safety and Health
MSHA	Mine Safety and Health Administration
OSHA	Occupational Safety and Health Administration
NTP	National Toxicology Program
IARC	International Agency for Research on Cancer
PEL	Permissible Exposure Limit
C	Ceiling Exposure Limit
TLV-TWA	Threshold Limit Value-Time Weighted Average
CAS	Chemical Abstract Service
EINECS	Inventory of Existing Chemical Substances (European)

Chithambarathanu Pillai (S.O.F.)  
March 2008

The information contained herein is accurate to the best of our knowledge. However, data, safety standards and government regulations are subject to change and, therefore, holders and users should satisfy themselves that they are aware of all current data and regulations relevant to their particular use of product. CARUS CORPORATION DISCLAIMS ALL LIABILITY FOR RELIANCE ON THE COMPLETENESS OR ACCURACY OR THE INFORMATION INCLUDED HEREIN. CARUS CORPORATION MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR USE OR PURPOSE OF THE PRODUCT DESCRIBED HEREIN. All conditions relating to storage, handling, and use of the product are beyond the control of Carus Chemical Company, and shall be the sole responsibility of the holder or user of the product.

CARUS CORPORATION 315 5<sup>TH</sup> STREET, PERU, ILLINOIS 61354



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**COPELAND CORPORATION MATERIAL SAFETY DATA BULLETIN**

**I. PRODUCT IDENTIFICATION**  
COPELAND Blended White Oil (999-5170-31)

Effective Date: 03/06/2000  
Supercedes: 07/14/1986

SUPPLIER:	24-HOUR EMERGENCY:
COPELAND CORP.	937-498-3011
CHEMICAL NAMES AND SYNONYMS:	
None	
USE OR DESCRIPTION:	PRODUCT AND MSDS INFORMATION:
COMPRESSOR OIL	(937)-498-3011

**II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES**

APPEARANCE: Odorless Liquid	ODOR: None	PH: NA
VISCOSITY AT 40 C, CS: 38		
VISCOSITY AT 100 C, CS: 5.4		
FLASH POINT F (C) : 375 (191)	(ASTM D-92)	
MELTING POINT F (C) : NA	POUR POINT F (C) : -31 (-35)	
BOILING POINT F (C) : 570 (299)	VOC: < 3.00 (wt%)	
RELATIVE DENSITY, 15/4 C: 0.882	SOLUBILITY IN WATER: Negligible	
VAPOR PRESSURE –mm H <sub>g</sub> 20C: <.1		

NA = Not applicable NE = Not Established D = Decomposes

**III. POTENTIALLY HAZARDOUS INGREDIENTS**

None

SEE SECTIONS XII AND XIII FOR REGULATORY AND FURTHER COMPOSITIONAL DATA.

**IV. HEALTH HAZARD DATA**

INCLUDES AGGRAVATED MEDICAL CONDITIONS, IF ESTABLISHED

THRESHOLD LIMIT VALUE: 5.00 mg/m<sup>3</sup> Suggested for Oil Mist  
EFFECTS OF OVEREXPOSURE: Not hazardous except as oil mist. Prolonged or repeated overexposure to oil mists may lead to chronic pulmonary inflammation, in rare instances.

**V. EMERGENCY AND FIRST AID PROCEDURES  
FOR PRIMARY ROUTES OF ENTRY**

EYE CONTACT: Flush eyes for 15 min, with large amounts of water. If material is hot, treat for thermal burns and take victim to the hospital immediately.  
SKIN CONTACT: Remove contaminated clothing. If material is hot, submerge injured area in cold water. If victim is severely burned take to a hospital for burn treatment.  
INHALATION: This material has a low vapor pressure and is not expected to present an inhalation exposure at ambient temperatures.  
INGESTION: May act as laxative. Do not induce vomiting.

## VI. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT F (C): 375 (191) (ASTM D-92)  
FLAMMABLE LIMITS. LEL: NA UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, foam or carbon dioxide.  
SPECIAL FIRE FIGHTING PROCEDURES: Water may be ineffective, but can be used to cool container exposed to heat or flame. Care should be used when using water as foam as flooding may occur.  
UNUSUAL FIRE AND EXPLOSION HAZARDS: Dense smoke may be generated while burning. CO<sub>x</sub> and other oxides may be generated as combustion products.  
NFPA HAZARD ID: Health 0 Flammability: 1, Reactivity: 0

## VII. REACTIVITY DATA

STABILITY (Thermal, Light, etc.): Stable  
CONDITIONS TO AVOID: None  
INCOMPATIBILITY (Materials to Avoid): May react with strong oxidizing agents.  
HAZARDOUS DECOMPOSITION PRODUCTS: None  
HAZARDOUS POLYMERIZATION: Will not occur.

## VIII. SPILL OR LEAK PROCEDURE

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Notify proper authorities of spill. Contain the spill and pick up using proper absorptive materials, such as sand, clay, etc. Do not allow spill to enter sewers or watercourses. Place used absorbent material into drums or other proper containers for disposal.  
WASTE MANAGEMENT: Refer to local, state and federal regulations for oil disposal.

## IX. SPECIAL PROTECTION INFORMATION

EYE PROTECTION: Safety glasses  
SKIN PROTECTION: Neoprene Gloves  
RESPIRATORY PROTECTION: Not required under normal use.  
VENTILATION: Not required under normal use. Use NIOSH/MSHA approved respirator with dual organic vapor/mist and particulates cartridge if vapor concentration exceeds permissible exposure limit.

## X. SPECIAL PRECAUTIONS

HANDLING: Do not transfer to unmarked containers. Store in closed containers away from heat, sparks or flame. This product is not classified hazardous under DOT regulations. Fire extinguishers should be kept readily available in the storage area.



## XI. TOXICOLOGICAL DATA ACUTE TOXICOLOGY

ORAL TOXICITY (RATS): Low order acute oral toxicity – Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Mild irritation to nose, throat and respiratory tract. . Based on testing of similar products and/or the components.

EYE IRRITATION (RABBITS): Expected to be moderately irritating. Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Mild skin irritation, may cause skin sensitization – Based on testing of similar products and/or the components.

SIGNS and SYMPTOMS: Irritation as noted. Skin sensitization (allergy) may be evidenced by rashes, especially hives.

If used in applications where mist may be generated, observe a TWA/PEL of 5mg/m<sup>3</sup> (OSHA and ACGIH) and a STEL 10mg/m<sup>3</sup> (ACGIH) for mineral oil mist.

## XII. REGULATORY INFORMATION

GOVERNMENTAL INVENTORY STATUS: All components registered in accordance with TSCA.  
Transport Information:

DOT:

Shipping Name: Not applicable

Hazard Class: Not applicable

Freight Classification: 65 Petroleum Oil, n. o. b. i. n.

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined not to be hazardous.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedures (TCLP). However, used product may be regulated.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no “EXTREMELY HAZARDOUS SUBSTANCES.”

SARA (311/312 – FORMERLY 302) REPORTABLE HAZARD CATEGORIES: None

This product contains no chemicals reportable under SARA (313) toxic release program.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
---------------	------------	----------------

NO REPORTABLE INGREDIENTS

REGULATORY LISTS SEARCHED

1 = ACGIH ALL	6 = IARC 1	11 = TSCA 4	17 = CA P65	22 = MI 293
2 = ACGTH A1	7 = IARC 2A	12 = TSCA 5a2	18 = CA RTK	23 = MN RTK
3 = ACGTH A2	8 = IARC 2B	13 = TSCA 5e	19 = FL RTK	24 = NJ RTK
4 = NTP CARC	9 = OSHA CARC	14 = TSCA 6	20 = IL RTK	25 = PA RTK
5 = NTP SUS	10 = OSHA Z	15 = TSCA 12b	21 = LA RTK	26 = RI RTK
		16 = WHMIS		

CARC = CARCINOGEN; SUS = SUSPECTED CARCINOGEN

NOTE: THIS PRODUCT IS NOT FORMULATED TO CONTAIN PCBS.

PREPARED BY COPELAND CORPORATION  
COPELAND CORPORATION  
1675 W. CAMPBELL RD.  
SIDNEY, OH 45365  
937-498-3011

# Material Safety Data Bulletin

## 1. PRODUCT AND COMPANY IDENTIFICATION

**APPROVAL DATE:** 01/20/97

**PRODUCT NAME:** COPELAND ULTRA 22CC

**SUPPLIER:** MOBIL OIL CORP.  
AMERICAS MARKETING AND REFINING  
3225 GALLOWS RD.  
FAIRFAX, VA 22037

**24 - HOUR EMERGENCY (CALL COLLECT):**  
609-737-4411

**PRODUCT AND MSDS INFORMATION:**  
800-662-4525 703-849-5700

**CHEMTREC:**  
800-424-9300 202-483-7616

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL NAMES AND SYNONYMS:**  
SYNTHETIC ESTERS AND ADDITIVES

**INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:**  
THIS PRODUCT IS NOT FORMULATED TO CONTAIN INGREDIENTS WHICH HAVE EXPOSURE LIMITS ESTABLISHED BY U.S. AGENCIES. IT IS NOT HAZARDOUS TO HEALTH AS DEFINED BY THE EUROPEAN UNION DANGEROUS SUBSTANCES/PREPARATIONS DIRECTIVES. SEE SECTION 15 FOR A REGULATORY ANALYSIS OF THE INGREDIENTS.

SEE SECTION 15 FOR EUROPEAN LABEL INFORMATION.

SEE SECTION 8 FOR EXPOSURE LIMITS (IF APPLICABLE).

## 3. HAZARDS IDENTIFICATION

**US OSHA HAZARD COMMUNICATION STANDARD:**  
PRODUCT ASSESSED IN ACCORDANCE WITH OSHA 29 CFR 1910.1200 AND DETERMINED NOT TO BE HAZARDOUS.

**EFFECTS OF OVEREXPOSURE:**  
NO SIGNIFICANT EFFECTS EXPECTED.

**EMERGENCY RESPONSE DATA:**  
STRAW LIQUID. DOT ERG NO. - NA

## 4. FIRST AID MEASURES

**EYE CONTACT:** FLUSH THOROUGHLY WITH WATER. IF IRRITATION OCCURS, CALL A PHYSICIAN.

**SKIN CONTACT:** WASH CONTACT AREAS WITH SOAP AND WATER.

**INHALATION:** REMOVE FROM FURTHER EXPOSURE. IF RESPIRATORY IRRITATION, DIZZINESS, NAUSEA, OR UNCONSCIOUSNESS OCCURS, SEEK IMMEDIATE MEDICAL ASSISTANCE AND CALL A PHYSICIAN. IF BREATHING HAS STOPPED, USE MOUTH TO MOUTH RESUSCITATION.

**INGESTION:** NOT EXPECTED TO BE A PROBLEM. HOWEVER, IF GREATER THAN 1/2 LITER (PINT) INGESTED, IMMEDIATELY GIVE 1 TO 2 GLASSES OF WATER AND CALL A PHYSICIAN, HOSPITAL EMERGENCY ROOM OR POISON CONTROL CENTER FOR ASSISTANCE. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

## 5. FIRE-FIGHTING MEASURES

**EXTINGUISHING MEDIA:** CARBON DIOXIDE, FOAM, DRY CHEMICAL AND WATER FOG.

**SPECIAL FIRE FIGHTING PROCEDURES:** WATER OR FOAM MAY CAUSE FROTHING. USE WATER TO KEEP FIRE EXPOSED CONTAIN-

ERS COOL. WATER SPRAY MAY BE USED TO FLUSH SPILLS AWAY FROM EXPOSURE. PREVENT RUNOFF FROM FIRE CONTROL OR DILUTION FROM ENTERING STREAMS, SEWERS, OR DRINKING WATER SUPPLY.

**SPECIAL PROTECTIVE EQUIPMENT:** FOR FIRES IN ENCLOSED AREAS, FIREFIGHTERS MUST USE SELF-CONTAINED BREATHING APPARATUS.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** NONE. FLASH POINT C(F): >220(428) (ASTM D-92). FLAMMABLE LIMITS - LEL: NA, UEL: NA.

**NFPA HAZARD ID:** HEALTH: 0, FLAMMABILITY: 1, REACTIVITY: 0  
HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE.

## 6. ACCIDENTAL RELEASE MEASURES

**NOTIFICATION PROCEDURES:** REPORT SPILLS AS REQUIRED TO APPROPRIATE AUTHORITIES. U. S. COAST GUARD REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO COAST GUARD TOLL FREE NUMBER (800) 424-8802. IN CASE OF ACCIDENT OR ROAD SPILL NOTIFY CHEMTREC (800) 424-9300.

**PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:** ADSORB ON FIRE RETARDANT TREATED SAWDUST, DIATOMACEOUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

**ENVIRONMENTAL PRECAUTIONS:** PREVENT SPILLS FROM ENTERING STORM SEWERS OR DRAINS AND CONTACT WITH SOIL.

**PERSONAL PRECAUTIONS:** SEE SECTION 8

## 7. HANDLING AND STORAGE

**HANDLING:** THIS MATERIAL IS NOT INTENDED FOR USE IN AIR COMPRESSORS FOR BREATHING APPLICATIONS. NO SPECIAL PRECAUTIONS ARE NECESSARY BEYOND NORMAL GOOD HYGIENE PRACTICES. SEE SECTION 8 FOR ADDITIONAL PERSONAL PROTECTION ADVICE WHEN HANDLING THIS PRODUCT.

**STORAGE:** DO NOT STORE IN OPEN OR UNLABELLED CONTAINERS. STORE AWAY FROM STRONG OXIDIZING AGENTS OR COMBUSTIBLE MATERIAL.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**VENTILATION:** USE IN WELL VENTILATED AREA.

**RESPIRATORY PROTECTION:** NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

**EYE PROTECTION:** NORMAL INDUSTRIAL EYE PROTECTION PRACTICES SHOULD BE EMPLOYED.

**SKIN PROTECTION:** NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED.

**EXPOSURE LIMITS:** THIS PRODUCT DOES NOT CONTAIN ANY COMPONENTS WHICH HAVE RECOGNIZED EXPOSURE LIMITS. HOWEVER, A THRESHOLD LIMIT VALUE OF 5.00 MG/M3 IS SUGGESTED FOR OIL MIST.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

TYPICAL PHYSICAL PROPERTIES ARE GIVEN BELOW. CONSULT PRODUCT DATA SHEET FOR SPECIFIC DETAILS.

**APPEARANCE:** LIQUID  
**COLOR:** STRAW  
**ODOR:** MILD  
**ODOR THRESHOLD-PPM:** NA  
**PH:** NA

**BOILING POINT C(F):** > 316(600)  
**MELTING POINT C(F):** NA  
**FLASH POINT C(F):** > 220(428) (ASTM D-92)  
**FLAMMABILITY:** NA  
**AUTO FLAMMABILITY:** NE  
**EXPLOSIVE PROPERTIES:** NA  
**OXIDIZING PROPERTIES:** NA  
**VAPOR PRESSURE-MMHG 20 C:** NA  
**VAPOR DENSITY:** NE  
**EVAPORATION RATE:** NA  
**RELATIVE DENSITY, 15/4 C:** 0.99  
**SOLUBILITY IN WATER:** NEGLIGIBLE  
**PARTITION COEFFICIENT:** NE  
**VISCOSITY AT 40 C, CST:** > 22.0  
**VISCOSITY AT 100 C, CST:** 4.9  
**POUR POINT C(F):** < -54(-65)  
**FREEZING POINT C(F):** NE  
**VOLATILE ORGANIC COMPOUND:** NE

NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR  
MARKETING REPRESENTATIVE.

#### 10. STABILITY AND REACTIVITY

**STABILITY (THERMAL, LIGHT, ETC.):** STABLE.  
**CONDITIONS TO AVOID:** EXTREME HEAT.  
**INCOMPATIBILITY (MATERIALS TO AVOID):** STRONG OXIDIZERS.  
**HAZARDOUS DECOMPOSITION PRODUCTS:** CARBON MONOXIDE.  
**HAZARDOUS POLYMERIZATION:** WILL NOT OCCUR.

#### 11. TOXICOLOGICAL DATA

##### — ACUTE TOXICOLOGY —

**ORAL TOXICITY (RATS):** PRACTICALLY NON-TOXIC (LD50: GREATER THAN 2000 MG/KG). --BASED ON TESTING OF SIMILAR PRODUCTS ANO/OR THE COMPONENTS.

**DERMAL TOXICITY (RABBITS):** PRACTICALLY NON-TOXIC (LD50: GREATER THAN 2000 MG/KG). --BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

**INHALATION TOXICITY (RATS):** NOT ESTABLISHED  
**EYE IRRITATION (RABBITS):** PRACTICALLY NON-IRRITATING. (DRAIZE SCORE: GREATER THAN 6 BUT 15 OR LESS). --BASED ON TESTING OF SIMILAR PRODUCTS ANO/OR THE COMPONENTS.  
**SKIN IRRITATION (RABBITS):** PRACTICALLY NON-IRRITATING. (PRIMARY IRRITATION INDEX: GREATER THAN 0.5 BUT LESS THAN 3). --BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

#### 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL FATE AND EFFECTS:** THIS MATERIAL MEETS OECD READY BIODEGRADABILITY CRITERIA.

#### 13. DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL:** PRODUCT IS SUITABLE FOR BURNING IN AN ENCLOSED, CONTROLLED BURNER FOR FUEL VALUE OR DISPOSAL BY SUPERVISED INCINERATION. SUCH BURNING MAY BE LIMITED PURSUANT TO THE RESOURCE CONSERVATION AND RECOVERY ACT. IN ADDITION, THE PRODUCT IS SUITABLE FOR PROCESSING BY AN APPROVED RECYCLING FACILITY OR CAN BE DISPOSED OF AT AN APPROPRIATE GOVERNMENT WASTE DISPOSAL FACILITY. USE OF THESE METHODS IS SUBJECT TO USER COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND CONSIDERATION OF PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

**RCRA INFORMATION:** THE UNUSED PRODUCT, IN OUR OPINION, IS NOT SPECIFICALLY LISTED BY THE EPA AS A HAZARDOUS WASTE (40 CFR, PART 261D), NOR IS IT FORMULATED TO CONTAIN MATERIALS WHICH ARE LISTED HAZARDOUS WASTES. IT DOES NOT EXHIBIT THE HAZARDOUS CHARACTERISTICS OF IGNITABILITY, CORROSIVITY, OR REACTIVITY AND IS NOT FORMULATED WITH CONTAMINANTS AS DETERMINED BY THE TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP). HOWEVER, USED PRODUCT MAY BE REGULATED.

#### 14. TRANSPORT INFORMATION

**USA DOT:** NOT REGULATED BY USA DOT.

**RID/ADR:** NOT REGULATED BY RID/ADR.

**IMO:** NOT REGULATED BY IMO.

**IATA:** NOT REGULATED BY IATA.

#### 15. REGULATORY INFORMATION

**GOVERNMENTAL INVENTORY STATUS:** ALL COMPONENTS COMPLY WITH TSCA, EINECS/ELINCS, AICS, AND DSL.

**EU LABELING:** EU LABELING NOT REQUIRED.

**U.S. SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III:** THIS PRODUCT CONTAINS NO "EXTREMELY HAZARDOUS SUBSTANCES". SARA (311/312) REPORTABLE HAZARD CATEGORIES: NONE. THIS PRODUCT CONTAINS NO CHEMICALS REPORTABLE UNDER SARA (313) TOXIC RELEASE PROGRAM.

THE FOLLOWING PRODUCT INGREDIENTS ARE CITED ON THE LISTS BELOW:

CHEMICAL NAME	CAS NUMBER	LIST CITATIONS
ETHENE, CHLOROTRIFLUORO-, HOMOPOLYMER (0.25%)	9002-83-9	22

##### — REGULATORY LISTS SEARCHED —

1=ACGIH ALL	6=IARC 1	11=TSCA 4	17=CA P65	22=MI 293
2=ACGIH A1	7=IARC 2A	12=TSCA 5A2	18=CA RTK	23=MN RTK
3=ACGIH A2	8=IARC 2B	13=TSCA 5E	19=FL RTK	24=NJ RTK
4=NTP CARC	9=OSHA CARC	14=TSCA 6	20=IL RTK	25=PA RTK
5=NTP SUS	10=OSHA Z	15=TSCA 12B	21=LA RTK	26=RI RTK

CODE KEY: CARC = CARCINOGEN; SUS = SUSPECTED CARCINOGEN

#### 16. OTHER INFORMATION

**USE:** COMPRESSOR OIL

**NOTE:** MOBIL PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBs.

PLEASE CALL THE CUSTOMER RESPONSE CENTER ON 800-662-4525 FOR FORMULATION DISCLOSURE.

FOR MOBIL USE ONLY: MHC: 1\* 1\* NE 1\* 1\*, MPPEC: A, REQ: US MARKETING, SAFE USE: L

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## Material Safety Data Bulletin

### 1. PRODUCT AND COMPANY IDENTIFICATION

**APPROVAL DATE:** 7/5/02

**PRODUCT NAME:** Copeland Ultra 32CC

ICI Americas Inc.  
Uniqema Corporate Center  
1000 Uniqema Boulevard  
New Castle, Delaware 19720-2790

**ICI Operator (24 hr.):** (302) 574-5000

**Medical Emergency (24 hr.):** (888) 456-6218

Chemical Emergency (24 hr.) Involving Transportation  
Spills, Leaks, Fires, Accidents: (800) 424-9300

**General:** Refrigeration Lubricant

**Alternate Names:**

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	New Jersey TSR	% (w/w)	OSHA PEL
Polyol Ester	08306620-5803P	>99	Not listed
Additives		<1	Not listed

Ingredients not precisely identified are proprietary or nonhazardous.

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Pale yellow, clear liquid

**Physical:** None

**Health:** None

Hazard summary as defined by OSHA Hazard Comm. Std., 29 CFR 1910.1200.

**Potential Health Effects:**

**General:** This health assessment is based on a consideration of the composition of this product.

Repeated or prolonged skin contact may result in irritation. High concentrations of aerosols or mists may be slightly irritating to the upper respiratory tract.

Read the entire MSDS for a thorough evaluation of the hazards.

### 4. FIRST AID MEASURES

**Skin Contact:** Remove contaminated clothing. Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention. Wash contaminated clothing and decontaminate footwear before reuse.

**Eye Contact:** Irrigate with eyewash solution or clean water, holding eyelids apart, for at least 10 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

**Inhalation:** Remove patient from exposure. If a cough or other respiratory symptoms develop, consult medical personnel.

**Ingestion:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Wash out mouth with water and give 1 or 2 glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel.

**Note to Physician:** This material is considered to be only slightly toxic. The potential complications associated with removing material from the GI tract, the amount ingested, and the time since ingestion should be taken into account when developing a treatment plan.

### 5. FIRE-FIGHTING MEASURES

**Fire and Explosion Hazards:** Low fire hazard. Unlikely to ignite except in high heat flux conditions. Thermal decomposition will evolve irritant vapors.

**Flammable limits (STP):** No data

**Extinguishing media:** Carbon dioxide, dry chemical or appropriate foam. If water is used, use with care to avoid possible violent production of steam.

**Fire fighting equipment:** Use self-contained breathing apparatus with full facepiece and protective clothing.

**Flashpoint (Deg C):** 254 (open cup)

**Autoignition temperature (Deg C):** 390

**Explosive Power:** None

**Combustion Products:** Carbon dioxide, Carbon monoxide

**NFPA Hazard ID:** Health: 1, Flammability: 1, Reactivity: 0,

**Special Hazard:** None

### 6. ACCIDENTAL RELEASE MEASURES

Wear skin protection during clean-up. Contain and absorb large spillages onto an inert, non-flammable absorbent carrier (such as earth or sand). Do not allow to enter drains, sewers, or waterways. Shovel into a chemical waste container for disposal or recovery.

### 7. HANDLING AND STORAGE

**Handling:** Avoid prolonged or recurring skin contact. Avoid inhalation of high concentrations of mists or aerosols.

**Storage Requirements:** Avoid ingress of moisture by keeping containers properly sealed when not in use. Product application requires that the product remain dry and free of excessive moisture pick-up. Keep away from strong oxidizing agents.

**Suitable Containers:** Mild Steel.

**Storage Temperature:** Ideal storage temperature is 60 to 100 deg F.

**Storage Life:** Two years, minimum.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure guidelines:** No OSHA PELs or ACGIH TLVs have been assigned. Minimize exposure in accordance with good industrial hygiene practice.

**Engineering controls:** Provide eyewash station and safety shower in work area. Use ventilation adequate to maintain safe levels.

**Respiratory protection:** Not normally needed, if controls are adequate. If needed, use MSHA-NIOSH approved respirator for organic vapors.

**Protective clothing:** Gloves determined to be impervious under conditions of use. Depending on conditions of use, additional protection may be required, such as apron, arm covers, or full body suit. Wash contaminated clothing before re-wearing.

**Eye protection:** Chemical tight goggles.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Pale yellow, clear liquid

**Odor:** Mild

**Flash point (deg C):** 254 (open cup)

**Boiling point (deg C):** >300

**Vapor pressure (mm Hg at 20 deg C):** 6.5

**Specific gravity (20/20 deg C):** 0.972

**Solubility in water:** Insoluble

**Solubility (other):** No data

**Pour point (deg C):** -45

**Kinematic viscosity (cSt at 40 deg C):** 30.8

**(cSt at 100 deg C):** 5.6

### 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal conditions.

**Incompatibility:** Strong oxidizing agents.

**Hazardous decomposition products:** Highly unlikely under intended handling and use. See Section 5.

**Combustion products:** Carbon dioxide, Carbon monoxide.

**Hazardous polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL DATA

### Possible human health effects:

**Inhalation:** High concentrations of mist may be slightly irritating to the upper respiratory tract. Thermal decomposition will evolve irritant vapors.

**Skin contact:** Repeated or prolonged skin contact may result in irritation. Not a skin irritant per OSHA Hazard Communication Standard, 29 CFR 1910.1200. It is unlikely to be a skin sensitizer following contact with human skin.

**Eye contact:** Unlikely to cause eye irritation in man.

**Ingestion:** Low oral toxicity.

**Carcinogenicity:** The ingredients of this product are not classified as carcinogenic by ACGIH or IARC, not regulated as carcinogens by OSHA, and not listed as carcinogens by NTP.

**Mutagenicity:** There is no substantial evidence of mutagenic potential.

**Reproductive effects:** No information is available and no adverse effects are anticipated.

**Teratogenicity and Fetotoxicity:** No information is available and no adverse effects are anticipated.

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## 12. ECOLOGICAL INFORMATION

**Persistence and degradation:** The product is substantially biodegradable in water.

Effects on effluent treatment: Not determined.

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## 13. DISPOSAL CONSIDERATIONS

**Disposal method:** Discarded product is not a hazardous waste under RCRA, 40 CFR 261.

**Container disposal:** Empty container retains product residue. Observe all hazard precautions. Do not distribute, make available, furnish or reuse empty container except for storage and shipment of original product. Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

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## 14. TRANSPORT INFORMATION

DOT, IMO, IATA/ICAO class: Not regulated.

---

## 15. REGULATORY INFORMATION

### OSHA classification:

**Physical:** Not regulated.

**Health:** Not regulated.

**TSCA (Toxic Substances Control Act) Regulations:** All ingredients are on the TSCA Chemical Substances Inventory.

**CERCLA and SARA Regulations (40 CFR 355, 370, and 372):** This product does not contain any chemicals subject to the reporting requirements of SARA Section 313.

**Controlled Products Regulations (WHMIS) Classification:** Not regulated. IARC Classification: None of the components of this product are listed on IARC.

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## 16. OTHER INFORMATION

### HMIS Ratings:

**Health Hazards:** 1

**Flammability Hazards:** 1

**Reactivity Hazards:** 0

**Personal Protection:** See MSDS Section 8

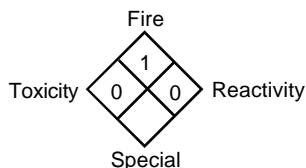
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# Material Safety Data Bulletin

## COPELAND ULTRA 200



### NFPA HAZARD RATING

- 4 - Extreme
- 3 - High
- 2 - Moderate
- 1 - Slight
- 0 - Insignificant

## DIVISION AND LOCATION — SECTION I

**Division:** PETROLEUM SPECIALTIES GROUP  
**Location:** GRETNA, LA  
P.O. BOX 308, GRETNA, LA 70054-0308  
**Emergency Telephone Number:** (504) 366-7281  
**Transportation Emergency:** CHEMTREC 1-(800) 424-9300  
(U.S. and Canada)

## CHEMICAL AND PHYSICAL PROPERTIES — SECTION II

**Chemical Name:** ALKYLATE  
**Formula:** proprietary  
**Hazardous Decomposition Products:** fumes, smoke, carbon monoxide, aldehydes and other decomposition products in the case of incomplete combustion.  
oxides of nitrogen  
**Incompatibility (Keep away from):** strong bases, oxidizing agents  
**Toxic and Hazardous Ingredients:** none  
**Form:** liquid      **Odor:** slight petroleum  
**Appearance:** clear      **Color:** light yellow  
**Specific Gravity (water=1):** typically .86  
**Boiling Point:** no data available  
**Melting Point:** not applicable  
**Solubility in Water (by weight %):** negligible  
**Volatile (by weight %):** 0 at 25°C  
**Evaporation Rate:** not applicable  
**Vapor Pressure (mm Hg at 20°C):** less than 1  
**Vapor Density (air=1):** no data available  
**pH (as is):** not applicable  
**Stability:** Product is stable under normal conditions  
**Viscosity SUS at 100°F:** Less than 100

## FIRE AND EXPLOSION DATA — SECTION III

**Special Fire Fighting Procedures:** Firefighters should wear self-contained breathing apparatus with full facepiece operated in pressure demand or positive pressure mode. Use full turnout gear.  
**Unusual Fire and Explosion Hazards:** none  
**Flashpoint:** (Method Used) ASTM D-92 greater than 150°C (300°F)  
**Flammable limits %:** no data available  
**Extinguishing agents:**  
Drychemical or Waterfog or CO<sub>2</sub> or Foam or Sand/Earth  
Closed containers exposed to fire may be cooled with water.

## HEALTH HAZARD DATA — SECTION IV

**Permissible concentrations (air):** no data available  
**Chronic effects of overexposure:** no data available  
**Acute toxicological properties:** no data available  
**Emergency First Aid Procedures:**  
**Eyes:** Immediately flush with large quantities of water for at least 15 minutes and call a physician.  
**Skin Contact:** Remove contaminated clothing. Wash skin with soap & water. If irritation develops, contact a physician.  
**Inhalation:** Remove to fresh air and if victim is not breathing, give artificial respiration. Call a physician immediately.  
**If Swallowed:** Contact a physician in the event of abdominal distress.

## SPECIAL PROTECTION INFORMATION—SECTION V

**Ventilation Type Required (Local, mechanical, special):** local if necessary to control mist or fumes from hot material  
**Respiratory Protection (Specify type):** Not-normally needed at ambient temperature. Use NIOSH/MSHA approved respirator where this product or its solutions are misted or sprayed.  
**Protective Gloves:** neoprene type  
**Eye Protection:** chemical safety goggles and, if handled hot, full face shield  
**Other Protective Equipment:** solvent resistant apron

## HANDLING OF SPILLS OR LEAKS — SECTION VI

**Procedure for Clean-Up:**  
Use appropriate protective clothing during clean-up. Shut off leak and dike up large spills. Absorb with an inert material such as earth, sand or vermiculite. Sweep up and dispose of in accordance with Federal, State and local regulations.  
**Waste Disposal:**  
Controlled incineration or landfill subject to all applicable Federal, State and local regulations.

## SPECIAL PRECAUTIONS — SECTION VII

**Precautions to be taken in handling and storage:**  
Keep container closed until ready for use.  
Do not store near strong oxidizing agents.  
Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Wash clothing before reuse. Store in a cool, dry area.  
**Maximum Storage Temperature:** 66°C (150°F)

## TRANSPORTATION DATA — SECTION VIII

**D.O.T.:** Not Regulated  
**Reportable Quantity:** not applicable  
**Freight Classification:** 65 Petroleum Oil, n.o.i.b.n.  
**Special Transportation Notes:** none

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**ENVIRONMENTAL/SAFETY REGULATIONS — SECTION IX**

**Section 313 (Title III Superfund Amendment and Reauthorization Act):** This product does not contain any chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 4D CFR Part 372.

---

**COMMENTS**

This product has not been tested in long term, chronic exposure tests, therefore, the handling procedures and safety precautions in the MSDS should be followed to minimize employee exposure.

---

**LABEL INFORMATION**

**CAUTION:** May cause skin and eye irritation with prolonged or repeated contact.

**EMERGENCY FIRST AID PROCEDURES**

- Eye Contact - Flush immediately with large amounts of water for at least 15 minutes. Call a physician.
- Skin Contact - Remove excess with cloth or paper. Wash thoroughly with soap and water. If Swallowed-Call a physician immediately.
- If Inhaled - Remove to fresh air.

**SAFETY AND HANDLING**

Keep container closed when not in use. Wear oil resistant gloves, safety goggles and, if handled hot, full face shield. KEEP OUT OF REACH OF CHILDREN! ! See material safety data sheet for detailed information. Wear protective clothing and equipment during cleanup. Absorb spills on an inert material such as earth, sand or vermiculite: sweep up and dispose of in accordance with federal, state and local regulations. ATTENTION: Never use pressure to empty; drum is not a pressure vessel. When empty, drum may have vapor or product residue. Residual vapors may explode on ignition; do not puncture, drill, grind or weld on or near this container. FOR INDUSTRIAL USE ONLY.

---

**Signature:** Kenneth Blair  
**Title:** Manager. Regulatory Affairs 2D3-552-345/  
**Original Date:** 02/28/97      **Sent to:** \_\_\_\_\_  
**Revision Date:** \_\_\_\_\_  
**Supersedes:** \_\_\_\_\_  
**Date Sent:** \_\_\_\_\_

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1119

DOW CORNING CORPORATION  
MATERIAL SAFETY DATA SHEET

Page 1

DAP(R) DOW CORNING(R) 100% SILICONE SEALANT - CLEAR  
UPC#: 00684, 05824, 08641, 08676, 08757

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Dow Corning Corporation	24 Hour Emergency Telephone:	(517) 496-5900
South Saginaw Road	Customer Service:	(517) 496-6000
Midland, Michigan 48686	Product Disposal Information:	(517) 496-5813
	Transportation Information:	(517) 496-8577
	CHEMTREC:	(800) 424-9300

MSDS No: 1684019

Current Version: 11/10/94

Generic Description: Silicone elastomer  
 Physical Form: Paste  
 Color: Colorless  
 Odor: Acetic acid odor  
 NFPA Profile: Health 1 Flammability 1 Reactivity 0

Note: NFPA = National Fire Protection Association

SECTION 2. OSHA HAZARDOUS COMPONENTS

CAS Number	Wt%	Component	Exposure Limits
004253343	2	Methyltriacetoxysilane	See acetic acid comments.
007631869	8	Silica, amorphous	OSHA PEL: TWA 15 mg/m3 total dust, 5 mg/m3 respirable fraction. ACGIH TLV: TW A 10 mg/m3 total dust.
017689779	2	Ethyltriacetoxysilane	See acetic acid comments.

Comments: Acetic acid is formed upon contact with water or humid air. Provide adequate ventilation to control exposures within guidelines of OSHA PEL: TWA 10 ppm and ACGIH TLV: TWA 10 ppm, STEL 15 ppm.

SECTION 3. EFFECTS OF OVEREXPOSURE

Acute Effects

**Eye:** Direct contact irritates moderately with redness and swelling.

**Skin:** A single short exposure (less than 24 hours) may irritate. Repeated prolonged contact (24 to 48 hours) may irritate moderately.

**Inhalation:** Vapor overexposure may irritate eyes, nose and throat.

**Oral:** Small amounts transferred to the mouth by fingers during use, etc., should not injure. Swallowing large amounts may cause digestive discomfort.

(Continued on Page 2)

SECTION 3. EFFECTS OF OVEREXPOSURE

Repeated Exposure Effects

---

Skin: None Known.

Inhalation: None Known.

Oral: None Known.

Special Hazards

---

This material contains the following components with the special hazards listed below.

Carcinogens

---

None Known

Teratogens

---

None Known

Mutagens

---

None Known

Reproductive Toxins

---

None Known

Sensitizers

---

None Known

Comments: Please read the additional information below.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions component data and/or expert review of the product.

(Continued on Page 3)

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SECTION 4. FIRST AID MEASURES

Eye: Immediately flush with water for 15 minutes. Get medical attention.

Skin: Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.

Inhalation: Remove to fresh air.

Oral: No first aid should be needed.

Comments: Treat according to person's condition and specifics of exposure.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point (Closed Cup): Not Applicable - Solid.

Autoignition Temperature: Not Determined

Flammability Limits in Air: Not Determined

Extinguishing Media: Carbon dioxide (CO2). Water. Water fog (or spray). Dry chemical. Foam.

Unsuitable Extinguishing Media: None

Fire Fighting Procedures: Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals.

Unusual Fire Hazards: None

Hazardous Decomposition Products:

---

Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Silicon dioxide. Carbon oxides and traces of incompletely burned carbon compounds. Formaldehyde.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Containment/Clean-up: Disposal of collected product, residues, and cleanup materials may be governmentally regulated. Observe all applicable local, state, and federal waste management regulations. Scrape up and contain for salvage or disposal. Observe all personal protection equipment recommendations described in Sections 5 and 8. Local, state, and federal reporting requirements may apply to spills or releases of this material into the environment. See applicable regulatory compliance information in Section 15.

NOTE: See Section 8 for Personal Protective Equipment for Spills

(Continued on Page 4)

---

SECTION 7. HANDLING AND STORAGE

Handling: No special precautions.

Storage: Keep container closed and store away from water or moisture.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

---

Local exhaust: Recommended.  
General Ventilation: Recommended

Personal Protective Equipment For Routine Handling

---

Eyes: Use proper protection - safety glasses as a minimum.

Skin: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

Suitable Gloves: Silver Shield(R). 4H(R).

Inhalation: Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator: Organic Vapor Type

Personal Protective Equipment For Spills

---

Eye: Use proper protection - safety glasses as a minimum.

Skin: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.

Inhalation/  
Suitable Respirator: Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.

(Continued on Page 5)

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Precautionary Measures: Avoid eye contact. Avoid skin contact. Avoid breathing vapor. Keep container closed. Use reasonable care.

Comments: Product evolves acetic acid (HOAc) when exposed to water or humid air. Provide ventilation during use to control HOAc within exposure guidelines (See Section 2) or use respiratory protection.

Note: These precautions are for room temperature handling. Use at elevated temperature, or aerosol/spray applications, may require added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form: Paste  
Color: Colorless  
Odor: Acetic acid odor  
Specific Gravity @ 25C: 1.02  
Viscosity: Not Applicable.  
Freezing/Melting Point: Not Determined.  
Boiling Point: Not Applicable.  
Vapor Pressure @ 25C: Not Applicable.  
Vapor Density: Not Applicable.  
Solubility in water: None.  
pH: Not Applicable.  
Volatile content: Not Applicable.

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Hazardous polymerization will not occur.

Conditions to Avoid: None.

Materials to Avoid: Oxidizing material can cause a reaction.

Comments: Water, moisture, or humid air - hazardous vapors form as described in Section 2.

SECTION 11. TOXICOLOGICAL INFORMATION

OPTIONAL SECTION - Complete information not yet available.

(Continued on Page 6)

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SECTION 12. ECOLOGICAL INFORMATION

OPTIONAL SECTION - Complete information not yet available.

SECTION 13. DISPOSAL CONSIDERATIONS

OPTIONAL SECTION - Complete information not yet available.

Call Dow Corning Environmental Mgmt. (517)496-6315, if more information is desired.

SECTION 14. TRANSPORT INFORMATION

DOT Information (49CFR 172.101)

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Proper Shipping Name: Not Available

Hazard Technical Name: Not Available

Hazard Class: Not Available

UN/NA Number: Not Available

Packing Group: Not Available

Call Dow Corning Transportation, (517)496-8577, if additional information is required.

SECTION 15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29CFR 1910.1200

TSCA Status: All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA Title III Chemical Listings:

---

Section 302 Extremely Hazardous Substances:  
None

Section 304 CERCLA Hazardous Substances:  
None

SECTION 15. REGULATORY INFORMATION

Section 312 Hazard Class:

Acute: Y  
Chronic: N  
Fire: N  
Pressure: N  
Reactive: N

Y = Yes N = No

Section 313 Toxic Chemicals:

None present or none present in regulated quantities.

Supplemental State Compliance Information

CAS Number	Wt%	Component
------------	-----	-----------

California

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer.

None Known.

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause birth defects or other reproductive harm.

None Known.

Massachusetts

007631869 8 Silica, amorphous

New Jersey

070131678 86 Dimethyl siloxane, hydroxy-terminated

004253343 2 Methyltriacetoxysilane

017689779 2 Ethyltriacetoxysilane

007631869 8 SILICA, AMORPHOUS FUMED; #1655

Pennsylvania

070131678 86 Dimethyl siloxane, hydroxy-terminated

007631869 8 Silica, amorphous

Product Name: 100% SILICONE SEALANT - CLEAR  
Revision Date: 11/10/94

Page 8

SECTION 16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

(R) indicates Registered or Trademark

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< End OF MSDS >



DOW CORNING CORPORATION  
MATERIAL SAFETY DATA SHEET

Page 1

DAP(R) DOW CORNING(R) 100% SILICONE SEALANT - WHITE  
UPC #: 00683, 05828, 08646

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Dow Corning Corporation  
South Saginaw Road  
Midland, Michigan 48686

24 Hour Emergency Telephone: (517) 496-5900  
Customer Service: (517) 496-6000  
Product Disposal Information: (517) 496-5813  
Transportation Information: (517) 496-8577  
CHEMTREC: (800) 424-9300

MSDS No: 3300820

Last Revised: 09/17/99

Generic Description: Silicone elastomer  
Physical Form: Paste  
Color: White  
Odor: Acetic acid odor  
NFPA Profile: Health 1 Flammability 1 Reactivity 0

Note: NFPA = National Fire Protection Association

SECTION 2. OSHA HAZARDOUS COMPONENTS

CAS Number	Wt%	Component	Exposure Limits
4253-34-3	1.0-5.0	Methyltriacetoxysilane	See acetic acid comments. OSHA PEL: TWA 15 mg/m <sup>3</sup> total dust, 5 mg/m <sup>3</sup> respirable fraction. ACGIH TLV: TW A 10 mg/m <sup>3</sup> total dust.
7631-86-9	7.0-13.0	Silica, amorphous	
17689-77-9	1.0-5.0	Ethyltriacetoxysilane	See acetic acid comments.

Comments: Acetic acid is formed upon contact with water or humid air.  
Provide adequate ventilation to control exposures within guidelines of OSHA  
PEL: TWA 10 ppm and ACGIH TLV: TWA 10 ppm, STEL 15 ppm.

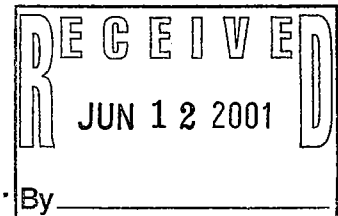
SECTION 3. EFFECTS OF OVEREXPOSURE

Acute Effects

Eye: Direct contact may cause moderate irritation.

Skin: May cause moderate irritation.

Inhalation: Vapor overexposure may irritate eyes, nose and throat.



(Continued on Page 2)

Received Time Jun.12. 8:15AM

SECTION 3. EFFECTS OF OVEREXPOSURE

Oral: Small amounts transferred to the mouth by fingers during use, etc., should not injure. Swallowing large amounts may cause digestive discomfort.

Repeated Exposure Effects

Skin: None Known.

Inhalation: None Known.

Oral: None Known.

Special Hazards

This material contains the following components with the special hazards listed below.

Carcinogens

None Known

Teratogens

None Known

Mutagens

None Known

Reproductive Toxins

None Known

Sensitizers

None Known

Comments: Please read the additional information below.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions component data and/or expert review of the product.

(Continued on Page 3)

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SECTION 4. FIRST AID MEASURES

Eye: Immediately flush with water for 15 minutes. Get medical attention.

Skin: Remove from skin and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation or other ill effects develop or persist.

Inhalation: Remove to fresh air.

Oral: No first aid should be needed

Comments: Treat according to person's condition and specifics of exposure.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point (Closed Cup): Not Applicable - Solid.  
Autoignition Temperature: Not Determined

Flammability Limits in Air: Not Determined

Extinguishing Media: Carbon dioxide (CO2). Water. Water fog (or spray). Dry chemical. Foam.

Unsuitable Extinguishing Media: None

Fire Fighting Procedures: Self-contained breathing apparatus and protective clothing should be worn in fighting fire involving chemicals.

Unusual Fire Hazards: None

Hazardous Decomposition Products:

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Thermal breakdown of this product during fire or very high heat conditions may evolve the following hazardous decomposition products: Silicon dioxide. Carbon oxides and traces of incompletely burned carbon compounds. Formaldehyde.

(Continued on Page 4)

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Containment/Clean-up: Disposal of collected product, residues, and cleanup materials may be governmentally regulated. Observe all applicable local, state, and federal waste management regulations. Scrape up and contain for salvage or disposal. Observe all personal protection equipment recommendations described in Sections 5 and 8. Local, state, and federal reporting requirements may apply to spills or releases of this material into the environment. See applicable regulatory compliance information in Section 15.

NOTE: See Section 8 for Personal Protective Equipment for Spills

## SECTION 7. HANDLING AND STORAGE

Handling: No special precautions.

Storage: Keep container closed and store away from water or moisture.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Controls

Local exhaust: Recommended  
General Ventilation: Recommended

### Personal Protective Equipment For Routine Handling

Eyes: Use proper protection - safety glasses as a minimum.

Skin: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as cleaned before reuse. practical and thoroughly gloves are recommended. Chemical p

Suitable Gloves: Silver Shield(R). 4H(R).

Inhalation: Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.

Suitable Respirator: Organic Vapor Type

(Continued on Page 5)

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Personal Protective Equipment For Spills

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- Eye:** Use proper protection - safety glasses as a minimum.
- Skin:** Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Chemical protective gloves are recommended.
- Inhalation/  
Suitable Respirator:** Use respiratory protection unless adequate local exhaust ventilation is provided or air sampling data show exposures are within recommended exposure guidelines. Industrial Hygiene Personnel can assist in judging the adequacy of existing engineering controls.

**Precautionary Measures:** Avoid eye contact. Avoid skin contact. Avoid breathing vapor. Keep container closed. Use reasonable care.

**Comments:** Product evolves acetic acid (HOAc) when exposed to water or humid air. Provide ventilation during use to control HOAc within exposure guidelines (See Section 2) or use respiratory protection. When heated above 150 C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system.

**Note:** These precautions are for room temperature handling. Use at elevated temperature, or aerosol/spray applications, may require added precautions.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form: Paste  
Color: White  
Odor: Acetic acid odor  
Specific Gravity @ 25C: 1.02  
Viscosity: Not Applicable.  
Freezing/Melting Point: Not Determined.  
Boiling Point: Not Applicable.  
Vapor Pressure @ 25C: Not Applicable.  
Vapor Density: Not Applicable.  
Solubility in Water: None.  
pH: Not Applicable.  
Volatile content: Not Applicable.

**Note:** The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

(Continued on Page 6)

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SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Hazardous polymerization will not occur.

Conditions to Avoid: None.

Materials to Avoid: Oxidizing material can cause a reaction.

Comments: Water, moisture, or humid air - hazardous vapors form as described in Section 2.

SECTION 11. TOXICOLOGICAL INFORMATION

OPTIONAL SECTION - Complete information not yet available.

SECTION 12. ECOLOGICAL INFORMATION

OPTIONAL SECTION - Complete information not yet available.

SECTION 13. DISPOSAL CONSIDERATIONS

OPTIONAL SECTION - Complete information not yet available.

Call Dow Corning Environmental Mgmt. (517)496-6315, if more information is desired.

SECTION 14. TRANSPORT INFORMATION

DOT Information (49CFR 172.101)

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Proper Shipping Name: Not Available

Hazard Technical Name: Not Available

Hazard Class: Not Available

UN/NA Number: Not Available

Packing Group: Not Available

Call Dow Corning Transportation, (517)496-8577, if additional information is required.

(Continued on Page 7)

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SECTION 15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29CFR 1910.1200

TSCA Status: All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA Title III Chemical Listings:

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Section 302 Extremely Hazardous Substances:  
None

Section 304 CERCLA Hazardous Substances:  
None

Section 312 Hazard Class:

Acute: Y  
Chronic: N  
Fire: N  
Pressure: N  
Reactive: N

Y = Yes      N = No

Section 313 Toxic Chemicals:  
None present or none present in regulated quantities.

Supplemental State Compliance Information

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CAS Number	Wt%	Component
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California

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer.

None Known.

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause birth defects or other reproductive harm.

None Known.

Massachusetts  
7631-86-9

7.0-13.0 Silica, amorphous

(Continued on Page 8)

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SECTION 15. REGULATORY INFORMATION

New Jersey

70131-67-8	>60	Dimethyl siloxane, hydroxy-terminated
4253-34-3	1.0-5.0	Methyltriacetoxysilane
17689-77-9	1.0-5.0	Ethyltriacetoxysilane
63148-62-9	1.0-5.0	Polydimethylsiloxane
7631-86-9	7.0-13.0	SILICA, AMORPHOUS FUMED; #1655

Pennsylvania

70131-67-8	>60	Dimethyl siloxane, hydroxy-terminated
7631-86-9	7.0-13.0	SILICA, AMORPHOUS FUMED; #1655

SECTION 16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

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(R) indicates Registered or Trademark

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< End OF MSDS >



# Material Safety Data Sheet

## 24 Hour Emergency Phone Numbers:

Medical: 1-800-327-3874  
1-513-558-5111

## Transportation:

1-800-535-5053  
1-352-323-3500

.....  
 \*NOTE: National Response Center emergency numbers to be used  
 \*only in the event of chemical emergencies involving a spill, leak,  
 \*fire, exposure or accident involving chemicals.  
 .....

**IMPORTANT:** Provide this information to employees, customers, and users of this product. Read this MSDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

## Section 1 - Chemical Product / Company Information

This Material Safety Data Sheet is available in Canadian French and Hispanic American Spanish upon request.  
 Esta hoja de datos de la seguridad de los materiales está disponible en francés canadiense y en español a su solicitud.  
 Los Datos de Seguridad del Producto pueden obtenerse en Espanol si lo requiere.

**Product Name:** KWIK-SEAL TUB & TILE CLEAR  
**Product UPC Number:** 18008 18016 35030 35032 71055  
**Product Use/Class:** Latex Caulk  
**Manufacturer:** DAP Inc.  
 2400 Boston Street Suite 200  
 Baltimore, MD 21224-4723  
 888-327-8477 (non-emergency matters)

**Revision Date:** 05/31/2005  
**Supercedes:** 01/05/2000  
**MSDS Number:** 00010019001

## Section 2 - Composition / Information On Ingredients

Chemical Name	CASRN	WT%	ACGIH TWA	ACGIH STEL	ACGIH CEIL	OSHA TWA	OSHA STEL	OSHA CEIL	Skin
Ethylene glycol	107-21-1	1-5	N.E.	N.E.	100 MGM3	N.E.	N.E.	N.E.	No
Amorphous silica	112945-52-5	1-5	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.	No
Ammonia	7664-41-7	0.1-1.0	25 PPM	35 PPM	N.E.	50 PPM	N.E.	N.E.	No
Gamma-aminopropyltriethoxysila	919-30-2	0.1-1.0	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.	No
Formaldehyde	50-00-0	<0.06	N.E.	N.E.	0.3 PPM	0.75 PPM	2 PPM	N.E.	No
Acetaldehyde	75-07-0	<0.004	N.E.	N.E.	25 PPM	200 PPM	N.E.	N.E.	No
Ethyl acrylate	140-88-5	<0.0002	5 PPM	15 PPM	N.E.	25 PPM	N.E.	N.E.	Yes

### Exposure Notes:

50-00-0 Formaldehyde is a specially regulated substance for which an OSHA chemical-specific exposure standard exists. Detailed information regarding this substance may be found in 29 CFR 1910.1048. Medical surveillance information regarding this substance may be found in Appendix C to 29 CFR 1910.1048.

**Important:** Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); these limits may vary between states.

**Note:** An employee's skin exposure to substances having a "YES" in the "SKIN" column in the table above shall be prevented or reduced to the extent necessary under the circumstances through the use of gloves, coveralls, goggles or other appropriate personal protective equipment, engineering controls or work practices

## Section 3 - Hazards Identification

**Emergency Overview:** A clear paste with a very slight ammonia odor. WARNING! Harmful if swallowed or absorbed through the skin. May cause eye or skin irritation. May cause eye, skin, nose, throat and respiratory tract irritation. This product contains ethylene glycol.

Refer to other MSDS sections for other detailed information.

**Effects Of Overexposure - Eye Contact:** May cause eye irritation.

**Effects Of Overexposure - Skin Contact:** Harmful if absorbed through the skin. Prolonged or repeated contact with skin may cause irritation.

**Effects Of Overexposure - Inhalation:** Harmful if inhaled. Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes). Prolonged, repeated, or high exposures may cause weakness and depression of the central nervous system.

**Effects Of Overexposure - Ingestion:** Harmful or fatal if swallowed. If ingested, may cause vomiting, diarrhea, and depressed respiration. Ingestion of ethylene glycol can cause gastrointestinal irritation, nausea, vomiting, diarrhea and if ingested in sufficient quantities, death.

**Effects Of Overexposure - Chronic Hazards:** Prolonged and repeated skin contact may cause irritation and possibly dermatitis. Repeated or prolonged exposure may cause respiratory system damage.

Overexposure may cause kidney, cardiovascular, skin and liver damage.

Formaldehyde vapor is a known animal carcinogen according to OSHA and NTP and is considered possibly carcinogenic to humans by inhalation. The International Agency for Research on Cancer considers formaldehyde to be a human carcinogen.

Ethylene Glycol may cause kidney and liver damage upon prolonged and repeated overexposures. Studies have shown that repeated inhalation of ethylene glycol has produced adverse cardiovascular changes in laboratory animals. Ethylene glycol has been shown to cause birth defects in laboratory animals.

**Primary Route(s) Of Entry:** Skin Contact, Inhalation, Eye Contact

**Medical Conditions which May be Aggravated by Exposure:** None known.

## Section 4 - First Aid Measures

**First Aid - Eye Contact:** In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

**First Aid - Skin Contact:** Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical aid if symptoms persist. Remove and wash contaminated clothing. If skin irritation persists, call a physician.

**First Aid - Inhalation:** If inhaled, remove to fresh air. If breathing is difficult, leave the area to obtain fresh air. If continued breathing difficulty is experienced, get medical attention immediately.

**First Aid - Ingestion:** If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

**Note to Physician:** None.

**COMMENTS:** Call Medical Emergency at 1-800-327-3874 if any irritation or complication arises from any of the above routes of entry.

## Section 5 - Fire Fighting Measures

**Flash Point, F:** > 200 F

**Method:** (Seta Closed Cup)

**Lower Explosive Limit, %:** Not Established

**Upper Explosive Limit, %:** Not Established

**Extinguishing Media:** Carbon Dioxide, Dry Chemical, Foam, Water Fog

**Unusual Fire And Explosion Hazards:** No special protective measures against fire required.

**Special Firefighting Procedures:** Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

## Section 6 - Accidental Release Measures

**Steps To Be Taken If Material Is Released Or Spilled:** Wear proper protective equipment as specified in Section 8. Use absorbent material or scrape up dried material and place in container.

## Section 7 - Handling And Storage

**Handling:** KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Do not breathe vapors. Use only with adequate ventilation. Wash thoroughly after handling. Avoid breathing vapor and contact with eyes, skin and clothing. Open all windows and doors or use other means to ensure cross-ventilation and fresh air entry during application and drying. Odor is not an adequate warning for hazardous conditions.

**Storage:** Close container after each use. Store containers away from excessive heat and freezing. Store away from caustics and oxidizers. Do not store at temperatures above 120 degrees F.

## Section 8 - Exposure Controls / Personal Protection

**Precautionary Measures:** Please refer to other sections and subsections of this MSDS.

**Engineering Controls:** Good general ventilation should be sufficient to control airborne levels. Ensure adequate ventilation, especially in confined areas. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits.

**Respiratory Protection:** In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

**Skin Protection:** Rubber gloves.

**Eye Protection:** Goggles or safety glasses with side shields.

**Other protective equipment:** Not required under normal use.

**Hygienic Practices:** Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

## Section 9 - Physical And Chemical Properties

<b>Boiling Range:</b>	210 - 220 F	<b>Vapor Density:</b>	Heavier Than Air
<b>Odor:</b>	Very Slight Ammonia	<b>Odor Threshold:</b>	Not Established
<b>Appearance:</b>	Clear	<b>Evaporation Rate:</b>	Slower Than n-Butyl Acetate
<b>Solubility in H2O:</b>	Not Established	<b>Specific Gravity:</b>	1.063
<b>Freeze Point:</b>	Not Established	<b>pH:</b>	Between 7.0 and 12.0
<b>Vapor Pressure:</b>	Not Established	<b>Viscosity:</b>	Not Established
<b>Physical State:</b>	Paste		

When reported, vapor pressure of this product has been calculated theoretically based on its constituent makeup and has not been determined experimentally.

(See section 16 for abbreviation legend)

## Section 10 - Stability And Reactivity

**Conditions To Avoid:** Excessive heat and freezing.

**Incompatibility:** Incompatible with strong bases and oxidizing agents.

**Hazardous Decomposition Products:** Normal decomposition products, i.e., COx, NOx.

**Hazardous Polymerization:** Hazardous polymerization will not occur under normal conditions.

**Stability:** Stable under recommended storage conditions.

## Section 11 - Toxicological Information

**Product LD50:** Not Established

**Product LC50:** Not Established

CASRN	Chemical Name	LD50	LC50	WT%
107-21-1	Ethylene glycol	Rat:4700 mg/kg	Rat:10876 mg/kg	1-5
112945-52-5	Amorphous silica	Rat:3160 mg/kg	-----	1-5
7664-41-7	Ammonia	-----	Rat:2000 ppm/4H	0.1-1.0
50-00-0	Formaldehyde	-----	Rat:203 mg/m3	<0.06
75-07-0	Acetaldehyde	-----	Rat:13300 ppm/4H	<0.004
140-88-5	Ethyl acrylate	-----	Rat:1414 ppm/4H	<0.0002

**Carcinogenicity:**

CAS No.	Chemical Name	ACGIH	OSHA	IARC	NTP	WT%
50-00-0	Formaldehyde	Suspected human carcinogen.	Potential cancer hazard.	Human carcinogen.	Anticipated carcinogen.	<0.06
75-07-0	Acetaldehyde	Confirmed animal carcinogen with unknown relevance to humans.	-----	Possible carcinogen.	Anticipated carcinogen.	<0.004
140-88-5	Ethyl acrylate	-----	-----	Possible carcinogen.	-----	<0.0002

**Significant Data with Possible Relevance to Humans:** This product contains trace amounts of free formaldehyde. OSHA and NTP identify formaldehyde as a potential carcinogen. IARC identifies formaldehyde as a human carcinogen. Formaldehyde has been shown to cause mutations in a variety of in-vitro test systems, the significance of which to humans is unknown. In a two-year inhalation study, rats showed carcinogenic effects in the respiratory system at 15 ppm of formaldehyde. There should be minimal risk when used with ventilation adequate to keep the atmospheric concentration of formaldehyde below the recommended exposure limits. Maintain adequate ventilation to prevent exposure above current OSHA / ACGIH exposure limits. Workplace monitoring of the air to define formaldehyde exposure levels may be necessary.

## Section 12 - Ecological Information

**Ecological Information:** Ecological injuries are not known or expected under normal use.

## Section 13 - Disposal Information

**Disposal Information:** Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

**EPA Waste Code if Discarded (40 CFR Section 261):** This product does not meet the definition of a hazardous waste according to U.S. EPA Hazardous Waste Management Regulation, 40 CFR Section 261.

## Section 14 - Transportation Information

<b>DOT Proper Shipping Name:</b>	Not Regulated	<b>Packing Group:</b>	N.A.
<b>DOT Technical Name:</b>	N.A.	<b>Hazard Subclass:</b>	N.A.
<b>DOT Hazard Class:</b>	N.A.	<b>DOT UN/NA Number:</b>	N.A.

Note: The shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and/or to non-domestic destinations.

## Section 15 - Regulatory Information

### CERCLA - SARA Hazard Category:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate Health Hazard, Chronic Health Hazard

### SARA Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number	WT%
Ethylene glycol	107-21-1	1-5

### Toxic Substances Control Act:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None

## U.S. State Regulations

### New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product:

Chemical Name	CAS Number	WT%
Proprietary Acrylic Polymer	Proprietary	30-60
Water	7732-18-5	30-60
White mineral oil	8042-47-5	7-13

### Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%:

Chemical Name	CAS Number	WT%
Proprietary Acrylic Polymer	Proprietary	30-60
Water	7732-18-5	30-60
White mineral oil	8042-47-5	7-13

### California Proposition 65:

Warning: The following ingredients present in the product are known to the State of California to cause cancer:

Chemical Name	CAS Number	Definition	Date Listed	WT%
Formaldehyde	50-00-0	Carcinogenic.	Listed: January 1, 1988	<0.06
Acetaldehyde	75-07-0	Carcinogenic.	Listed: April 1, 1988	<0.004
Ethyl acrylate	140-88-5	Carcinogenic.	Listed: July 1, 1989	<0.0002

Warning: The following ingredients present in the product are known to the State of California to cause birth defects or other reproductive harm:

None

## Section 16 - Other Information

### HMIS Ratings:

Health: 1      Flammability: 1      Reactivity: 0      Personal Protection: X

**VOLATILE ORGANIC COMPOUNDS, GR/LTR:** 44.1      **LB/GAL:** 0.4      **WT%:** 2.372

**REASON FOR REVISION:** Periodic Update

### Legend:

N.A. – Not Applicable

ACGIH – American Conference of Governmental Industrial Hygienists

N.E. – Not Established

SARA – Superfund Amendments and Reauthorization Act of 1986

N.D. – Not Determined

NJRTK – New Jersey Right-to-Know Law

VOC – Volatile Organic Compound

OSHA – Occupational Safety and Health Administration

**DURO DYNE CORPORATION**  
130 RT. 110  
FARMINGDALE N.Y. 11735  
EMERGENCY PHONE NO. 800-424-9300  
INFORMATION PHONE NO. 800-899-3876

<b>H.M.I.S.</b>	
<b>HEALTH</b>	<b>1</b>
<b>FLAMMABILITY</b>	<b>3</b>
<b>REACTIVITY</b>	<b>0</b>
<b>PERSONAL PROTECTION</b>	<b>B</b>
These ratings should be used only as part of fully implemented H.M.I.S. program.	

# MATERIAL SAFETY DATA SHEET

DATE OF PREPARATION 6/2000

## SECTION I

**TRADE NAME:** DURO DYNE ASA - MULTI PURPOSE SPRAY-ON ADHESIVE  
**MANUFACTURER CODE I.D.:** ASA

## SECTION II - HAZARDOUS INGREDIENTS

<b>INGREDIENT % BY WEIGHT</b>	<b>CAS NO.</b>	<b>OSHA PEL-TWA</b>	<b>ACGIH TLV-TWA</b>	<b>Other Limits Recommended</b>
HEPTANE	142-82-5	400 ppm	400 ppm	NA
ISOBUTANE	75-28-5	NE ppm	NE ppm	800 ppm (Aeropress)
PROPANE	74-98-6	1000 ppm	NE ppm	1000 ppm (NIOSH)

## SECTION III - PHYSICAL/CHEMICAL DATA

**BOILING POINT (F):** (CONC.) 94°  
**VAPOR PRESSURE:** @ 70°F: 45 psig  
**VAPOR DENSITY:** (Air =1), >1  
**SOLUBILITY IN WATER:** Insoluble  
**APPEARANCE & ODOR:** Cloudy, white liquid with petroleum solvent odor.

**SPECIFIC GRAVITY (H2O =1):** .60  
**MELTING POINT:** N.E.  
**EVAPORATION RATE:** >1  
(Butyl Acetate =1)

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

**FLASHPOINT :** (°F): < 0 TOC  
**U.E.L./ L.E.L.:** N.E.  
**EXTINGUISHING MEDIA:** Water, water fog, dry chemical, CO2.  
**SPECIAL FIRE FIGHTING PROCEDURES:** Self-contained respiratory protection should be provided for firemen fighting in buildings or confined areas.  
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Aerosols are under pressure. Exposure in excess of 120°F may cause bursting of can.

## SECTION V - REACTIVITY DATA

**STABILITY:** Stable.  
**INCOMPATIBILITY (MATERIALS TO AVOID):** Strong oxidizing agents and alkalis.  
**HAZARDOUS DECOMPOSITION :** Burns to form CO2, CO, and possible incompletely decomposed materials.  
**HAZARDOUS POLYMERIZATION:** Will not occur.  
**CONDITIONS TO AVOID:** High temperatures.

## SECTION VI - HEALTH HAZARD DATA

### **ROUTES OF ENTRY:**

**INHALATION?** YES    **SKIN?** YES    **INGESTION?** YES

**HEALTH HAZARDS (ACUTE & CHRONIC):** Fumes can irritate eyes. Overexposure may cause nausea, headache, dizziness. May be harmful or fatal if ingested.

**CARCINOGENITY: NTP?** NO    **IARC MONOGRAPHS?** NO    **OSHA REGULATED?** NO

**SIGNS & SYMPTOMS OF EXPOSURE:** May cause eye and skin irritation. Concentrated vapors may cause nausea, headaches or dizziness.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** None known.

**EMERGENCY & FIRST AID PROCEDURES:** Flush eyes with water. Wash skin with soap and water. Remove patient to fresh air. Call a physician if necessary.

## SECTION VII - DISPOSAL INFORMATION

### **STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED**

Avoid inhalation of concentrated vapors. Absorb spilled material with appropriate absorbent.

### **WASTE DISPOSAL METHOD**

Dispose of all wastes in accordance with Local, County, State and Federal Regulations.

## SECTION VIII - HANDLING INFORMATION

### **PRECAUTIONS TO BE TAKEN IN HANDLING & STORAGE**

Keep away from heat, sparks, open flame or direct sunshine. Do not puncture or incinerate container.

### **PRECAUTIONS**

Intentional misuse by deliberately concentrating and inhaling vapor contents can be harmful or fatal.

## SECTION IX - PERSONAL PROTECTION

**RESPIRATORY PROTECTION:** Not necessary under normal usage.

**SKIN:** Neoprene and rubber gloves suggested.

**EYES:** Wear safety goggles, glasses or face shield.

**OTHER PROTECTIVE EQUIPMENT:** Plastic apron suggested. Wash thoroughly with soap and water after handling.

## SECTION X - DOT SHIPPING INFORMATION

**PROPER SHIPPING NAME:** Consumer Commodity, Pressurized Aerosol Cans

**HAZARD CLASS:** ORM-D



**DURO DYNE CORPORATION**  
**81 SPENCE ST.**  
**BAY SHORE, N.Y. 11706**  
**EMERGENCY PHONE NO. 800-424-9300 (CHEMTREC)**  
**INFORMATION PHONE NO. 800-899-3876**

<b>H.M.I.S.</b>	
<b>HEALTH</b>	<b>2</b>
<b>FLAMMABILITY</b>	<b>0</b>
<b>REACTIVITY</b>	<b>0</b>
<b>PERSONAL PROTECTION</b>	<b>See Below</b>
<b>These ratings should be used only as part of fully implemented H.M.I.S. program.</b>	

# MATERIAL SAFETY DATA SHEET

PREPARED BY DURO DYNE 6/05  
REVISED 12/04

## SECTION I

**TRADE NAME:** DURO DYNE DDS-181 WATER BASED DUCT SEALANT  
**MANUFACTURER CODE I.D.:** DDS-181

## SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS #	PERCENT	OSHA PEL
Aluminum Hydroxide	21645-51-2	10-30	TWA (as A1) Soluble 2 MG/M3
Chlorinated Paraffin	63449-39-8	5-10	Not Established
Calcium Carbonate	471-34-1	10-30	TWA (Total dust) 15 MG/M3
			TWA (Respirable dust) 5 MG/M3
Kaolin Clay	1332-58-7	5-10	TWA (Total dust) 10 MG/M3
			TWA (Respirable dust) 5 MG/M3
Cellulose	9004-34-6	1-5	TWA (Total dust) 15 MG/M3
			TWA (Respirable dust) 5 MG/M3
Crystalline Silica	14808-60-7	0.1-1	TWA (Respirable dust) 0.1 MG/M3

## SECTION III - HAZARDS IDENTIFICATION

### POTENTIAL HEALTH EFFECTS:

**EYES:** Can cause minor irritation, tearing, and reddening

**SKIN:** Can cause minor skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

**INHALATION:** Can cause minor respiratory irritation. Inhalation of dusts produced during cutting, grinding or sanding of this product may cause irritation of the respiratory tract. Overexposure to crystalline silica may cause silicosis. This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

**INGESTION:** Not an anticipated route of exposure. No hazard in normal industrial use.

### LONG TERM CHRONIC HEALTH EFFECTS:

Target Organ(s): Lungs

**EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE:** Lung disease

**REGULATED CARCINOGEN STATUS:** Cancer Hazard. Unless noted below, this product does not contain regulated levels of NTP, IARC, ACGIH or OSHA listed carcinogens: Crystalline Silica

## SECTION IV - FIRST AID MEASURES

**EYES:** Use an eye wash to remove chemical from eye regardless of the level of hazard. Flush affected eye for at least 20 minutes. Tilt head to prevent chemical from transferring to the uncontaminated eye. Seek medical advice after flushing.

**SKIN:** Wash affected area with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

**INHALATION:** Remove subject to fresh air. Call a physician if symptoms persist.

**INGESTION:** Do not induce vomiting. Induced vomiting may lead to aspiration of the material into the lungs potentially causing chemical pneumonitis that may be fatal. Seek medical attention if symptoms develop. Provide medical care provider with this MSDS.

## SECTION V - FIRE FIGHTING MEASURES

**FLASHPOINT:** Non Flammable

**AUTOIGNITION TEMPERATURE:** N.E.

**U.E.L./L.E.L.(% in air):** N.E.

**EXTINGUISHERS:** Use water spray, foam, dry chemical or carbon dioxide.

**SPECIAL FIREFIGHTING PROCEDURES:** Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** There is the possibility of pressure buildup in closed containers when heated. Water spray may be used to cool the containers.

**HAZARDOUS COMBUSTION PRODUCT:** Carbon dioxide, Carbon monoxide, Chlorine containing gases.

## SECTION VI - ACCIDENTAL RELEASE MEASURES

**SPECIAL PROTECTION:** Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred.

**SPILL OR LEAK PROCEDURES:** Dike if necessary. Contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone (CHEMTREC): 1-800-424-9300

## SECTION VII - HANDLING AND STORAGE

**HANDLING:** Harmful or irritating material. Avoid contacting and breathing the material. Use only in a well ventilated area. This product contains an ingredient that may release formaldehyde at heated cure temperatures. This product contains an ingredient that may react with water or humidity to release methanol (67-56-1). The TWA for methanol is 200 ppm.

**STORAGE INFORMATION:** Store in a cool, dry place.

## SECTION VIII - EXPOSURE CONTROL/PERSONAL PROTECTION

**EYES:** Wear safety glasses when handling this product.

**SKIN:** Avoid skin contact by wearing chemically resistant Nitrile gloves and a long-sleeved shirt. An apron may be appropriate if splashing can occur.

**RESPIRATORY:** Respiratory protection may be required to avoid overexposure when handling. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).

**VENTILATION:** Use local exhaust ventilation or other engineering controls to minimize exposure.

## SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid

**COLOR:** Gray

**ODOR:** Slight Ammonia

**ODOR THRESHOLD:** N.E.

**WEIGHT PER GALLON(lbs):** 11.6

**SPECIFIC GRAVITY:** 1.39

**SOLIDS % BY WEIGHT:** 67.5

**PH:** N.E.

**BOILING RANGE (deg C):** N.E.

**FREEZING/MELTING POINT (deg C):** N.E.

**VAPOR DENSITY:** N.E.

**VAPOR PRESSURE (mm Hg):** N.E.

**EVAPORATION RATE:** N.E.

**OCTANOL/WATER COEFFICIENT:** N.E.

## SECTION X - STABILITY AND REACTIVITY DATA

**STABILITY:** Stable under normal conditions.

**CHEMICAL INCOMPATIBILITY:** N.E.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon Monoxide, Carbon Dioxide, Chlorine containing gases.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## SECTION XI - TOXICOLOGICAL/ ECOLOGICAL INFORMATION

### CHEMICAL NAME

Aluminum Hydroxide  
Calcium Carbonate  
Kaolin Clay  
Chlorinated Paraffin  
Cellulose

Crystalline Silica

### LD50/LC50

N.E.  
Oral LD50 Rat = 6450 mg/kg  
N.E.  
Oral LD50 Rat > 21500 ml/kg, Dermal LD50 Rabbit > 10 ml/kg  
Oral LD 50 Rat > 5 g/kg, Inhalation LC50 Rat > 5800 mg/cu m/4H  
Dermal LD50 Rabbit > 2g/kg  
N.E.

No additional health nor ecological information available.

## SECTION XII - DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Solidify and dispose of in an approved landfill. Consult State, Local, or Provincial authorities for more restrictive requirements.

## SECTION XIII - TRANSPORTATION INFORMATION

Consult Bill of Lading for transportation information.

DOT: Not regulated In containers <119 gallons and if not shipped by vessel if 119 gallons or more or if shipped by vessel:  
Environmental hazardous substances: Liquid, NOS (Chlorinated Paraffin), 9, UN3082, III, Marine Pollutant

IATA: NOT REGULATED

## SECTION XIV - REGULATORY INFORMATION

### INVENTORY STATUS

**U.S. EPA TSCA:** This product is in compliance with the Toxic Substances Control Act's Inventory requirements. For more information about the inventory status of this product, contact us at 631-249-9000.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada we recommend you contact us at 631-249-9000 to request an export overview.

### FEDERAL REPORTING

#### EPA SARA TITLE III Section 313:

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 72. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

### CHEMICAL NAME

### CAS NUMBER

### PERCENT

Polychlorinated Alkanes

63449-39-8

5-10%

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System: D2A

### STATE REGULATIONS

This MSDS is not prepared for distribution in California.

## SECTION XV - EXPOSURE LIMITS

<b>CHEMICAL NAME</b>	<b>ACGIH EXPOSURE LIMITS</b>	<b>AIHA WHEEL</b>
<b>Aluminum Hydroxide</b>	TWA (as A1) Soluble 2 MG/M3	N. E.
<b>Calcium Carbonate</b>	TWA 10 MG/M3	N. E.
<b>Kaolin Clay</b>	TWA (Respirable dust) 2 MG/M3	N. E.
<b>Chlorinated Paraffin</b>	Not Established	N. E.
<b>Cellulose</b>	TWA (Total dust) 10 MG/M3	N. E.
<b>Crystalline Silica</b>	TWA (Respirable Dust) 0.05 MG/M3	N. E.

## SECTION XVI- ADDITIONAL INFORMATION

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

**THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE. BECAUSE SOME OF THE INFORMATION IS DERIVED FROM INFORMATION PROVIDED TO DURO DYNE CORPORATION FROM ITS SUPPLIERS, DURO DYNE CORPORATION MAKES NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SINCE THE USE OF THIS INFORMATION AND THE CONDITIONS AND USE OF THIS PRODUCT ARE CONTROLLED BY THE USER, IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THE PRODUCT. THE INFORMATION IS SUPPLIED SOLELY FOR YOUR INFORMATION AND CONSIDERATION AND DURO DYNE CORPORATION ASSUMES NO RESPONSIBILITY FOR USE OR RELIANCE THEREON. IT IS THE RESPONSIBILITY OF THE USER OF DURO DYNE CORPORATION PRODUCTS TO COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.**

# MATERIAL SAFETY DATA SHEET

DATE PREPARED: March 15, 2004

SUPERSEDES: September 11, 2000

## SECTION 1 CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME *Packmaster® #1*

PRODUCT CODES 41601

COMPANY NAME



ADDRESS 1666 DIVISION STREET  
PALMYRA, N.Y. 14522

PHONE NUMBER 315-597-4811 FAX 315-597-3039

### EMERGENCY PHONE

315-597-4811  
MON. - FRI.  
9:00 AM - 4:00 PM

## SECTION 2 COMPOSITION AND INFORMATION ON INGREDIENTS

<u>COMPONENT NAME</u>	<u>CAS NUMBER</u>	<u>% WT</u>
Octylphenoxypoly (ethoxyethanol)	9036-19-5	
Polytetrafluoroethylene	9002-84-0	
Acrylic Copolymer	24980-62-9	
Rayon	61788-77-0	
White Petrolatum	8009-03-8	
Fibrous Glass	65997-17-3	

## SECTION 3 HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Under normal and intended use conditions it is not anticipated that significant amounts of hazardous components will be released. Heating product to temperatures in excess of 400C can evolve toxic fluorine compounds.

Excessive levels of some constituents can cause lung and respiratory tract disorders and irritation. These effects generally occur as a result of long term (months, years) exposures to high dust levels. Maintain dust concentrations at low levels.

# MATERIAL SAFETY DATA SHEET

March 15, 2004

*Packmaster*<sup>®</sup> #1

## SECTION 3 HAZARDS IDENTIFICATION (Continued from Page 1)

PRODUCT CONSTITUENTS LISTED AS CARCINOGENS	IARC	OSHA	NTP
Fiber Glass Continuous Filament <sup>(a)</sup> (IARC 3 - Not Classifiable with respect to Human Carcinogenicity) <sup>(a)</sup> includes: Nonrespirable glass particulate, Respirable glass particulate, and Respirable particulate with fiber like dimensions (glass shards)	Group 3	No	No

**Potential Health Effects:** Under normal and intended use conditions it is not anticipated that dust levels sufficient to cause symptoms or adverse health effects will be produced.

**Primary Routes of Entry:** Inhalation of dusts or fumes from thermal decomposition.  
Dermal and ocular contact.

**Target Organs:** Prolonged and repeated overexposure can cause lung and respiratory tract damage.

**Acute Effects of Overexposure:** High concentrations of dusts may be irritating to the eyes, skin, mucous membranes and respiratory tract. Skin contact may produce reddening of the skin and itching. If exposed to thermal decomposition products of the Polytetrafluoroethylene, temporary symptoms of polymer fume fever(chills, fever, cough and malaise).

**Chronic Effects of Overexposure:** Respiratory and lung disorders can result when exposed to prolonged and repeated elevated dust levels.

**Conditions Aggravated by Exposure:** Smoking aggravates the effects of exposure to some product constituents. Pre-existing respiratory and lung diseases may be aggravated where substantial airborne dust levels are presented.

## SECTION 4 FIRST AID MEASURES

**Eyes:** Flush the eyes with water for a least 15 minutes. Do not rub eyes. Get medical attention if necessary.

**Skin:** Wash contaminated skin thoroughly with soap or mild detergent. Get medical attention if irritation persists. Dermatitis should be treated symptomatically by a physician.

**Inhalation:** No adverse effects are anticipated by breathing small amounts during normal and intended use. If exposed to high dust levels, then remove to fresh air. Drink water and clear throat. Blow nose to clear dust.

# MATERIAL SAFETY DATA SHEET

March 15, 2004

*Packmaster*<sup>®</sup> #1

## SECTION 5 FIRE FIGHTING MEASURES

**Flash Point:** Not Applicable

**Method:** Not applicable

**Upper Flammable Limit (UFL):**

Not Applicable

**Lower Flammable Limit (LFL):**

Not Applicable

**Autoignition Temperature:**

Not Applicable

### Hazardous Products of Combustion

Composition of by-products from the result of a fire or thermal decomposition will vary depending on the specific conditions. Hazardous gases/vapors include smoke, hydrogen fluoride, hydrogen cyanide, carbonyl fluoride, perfluorocarbon olefins, acrylonitrile monomer and carbon monoxide. There may be others unknown to us.

### Fire fighting Instructions

As in any fire, use a self-contained breathing apparatus (SCBA) in the pressure-demand mode in conjunction with full protective gear.

### Extinguishing Media

Carbon dioxide, water, or ABC dry chemical. Be sure to use fire extinguisher appropriate to surrounding fire.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Small Spill

No special precautions are necessary where packing is intact and there is no substantial product dust generated. For any small amounts of dust, wet wipe and dispose.

### Large Spill

If substantial amounts of dust are present as the result of a physical disturbance which disrupts the matrix of the material, the material should first be lightly misted with water then vacuumed using a vacuum cleaner equipped with a High Efficiency Particulate Air (HEPA) filtration device.

## MATERIAL SAFETY DATA SHEET

March 15, 2004

*Packmaster*<sup>®</sup> #1

### SECTION 7 HANDLING AND STORAGE

#### Handling

Dust generated from this material must be managed by wet wiping or vacuuming with HEPA filtration equipped vacuum cleaners. Personnel involved with handling this product should be wearing appropriate personal protective equipment as outlined in section 8.

#### Work / Hygienic Practices

Personnel should avoid contaminating cigarettes or tobacco with particles of PTFE. Do not eat or smoke in areas of storage or processing.

#### Storage

The product is stable under all conditions of storage.

### SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT

#### Engineering Controls

**Ventilation:** Normal and intended use of this product should not produce material component levels in substantial airborne concentrations. In keeping with standard Industrial Hygiene practices, if exposure levels are not known, or if dust levels exceed the occupational exposure limits, then use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels to below recommended exposure limits. Maintain and test ventilation systems in accordance with OSHA regulations (29CFR 1910.94). Review OSHA 29CFR part 1910.1000 or 29CFR Part 1926 Subpart Z for exposure level information.

#### Personal Protective Equipment

**Eyes and Face:** Special precautions are not normally necessary. If dust is generated, use American National Standards Institute (ANSI) approved eye and face protection when subjected to potential eye and face hazards.

**Skin:** Use of impervious gloves is recommended.

**Respiratory:** Normal intended use of this product should not produce material component levels in substantial concentrations. In keeping with standard Industrial Hygiene practices, if exposure levels are not known, or if the dust levels exceed occupational exposure limits and engineering controls cannot be used; then use the appropriate respiratory protection. Use a NIOSH approved air purifying respirator with an R100 or P100 (high efficiency) filter cartridge in accordance with OSHA respirator program requirements (29CFR 1910.134).



# MATERIAL SAFETY DATA SHEET

March 15, 2004

*Packmaster® #1*

<b>SECTION 8 EXPOSURE CONTROLS (Continued from Page 4)</b>
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**EXPOSURE GUIDELINES**

<u>Component</u>	<u>OSHA PEL (8 Hr. TWA)</u>	<u>ACGIH TLV (8 Hr. TWA)</u>
Polytetrafluoroethylene	None Established	None Established
Acrylic Copolymer	None Established	None Established
Octylphenoxypoly (ethoxyethanol)	None Established	None Established
Fibrous Glass Nonrespirable fibers and Particulate	15.0 mg/m <sup>3</sup> (total dust)	5.0 mg/m <sup>3</sup> (respirable fraction)
Respirable Particulate	5.0 mg/m <sup>3</sup> (respirable dust)	3.0 mg/m <sup>3</sup> (PNOC)
Respirable particulate with fiber like dimensions (glass shards)	None Established	1 fiber/cc (respirable)
Rayon	None Established	None Established
White Petrolatum	None Established	None Established

<b>SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES</b>
---

<b>Appearance:</b>	White lattice braided packing.	<b>Boiling Point:</b>	Not Applicable
<b>Odor:</b>	Slight odor	<b>Freezing Point:</b>	Not Applicable
<b>Physical State:</b>	Solid	<b>Melting Point:</b>	Not Applicable
<b>pH:</b>	Not Applicable	<b>Solubility In Water:</b>	< 2 %
<b>Vapor Pressure:</b>	Not Applicable	<b>Specific Gravity:</b>	Not Applicable

# MATERIAL SAFETY DATA SHEET

March 15, 2004

*Packmaster*<sup>®</sup> #1

## SECTION 10 STABILITY AND REACTIVITY

**Stability:** The material is stable.

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Conditions to avoid:** Do not expose the material to direct flame.

**Materials to avoid:** Strong alkali and oxidizing agents.

### **Hazardous Decomposition Products**

Composition of by-products from the result of a fire or thermal decomposition will vary depending on the specific conditions. Hazardous gases/vapors include smoke, hydrogen fluoride, hydrogen cyanide, carbonyl fluoride, perfluorocarbon olefins, acrylonitrile monomer and carbon monoxide. There may be others unknown to us.

## SECTION 11 TOXICOLOGICAL INFORMATION

Toxicity data is available on the individual components. Call 315/597-4811 for information.

## SECTION 12 ECOLOGICAL INFORMATION

No ecological information is available on this product.

## SECTION 13 DISPOSAL INFORMATION

Dispose of in accordance with local, state, and federal regulations. Disposal in an EPA approved landfill is recommended.

## SECTION 14 TRANSPORTATION INFORMATION

DOT: Not Regulated

## SECTION 15 REGULATORY INFORMATION

Materials known to the state of California to cause cancer :

None known.

## MATERIAL SAFETY DATA SHEET

March 15, 2004

*Packmaster*<sup>®</sup> #1

### SECTION 16 OTHER INFORMATION

This MSDS is prepared to safeguard the health of workers and to comply with the requirements of 29CFR 1910.1200. Consult your employer before working with this material.

#### DISCLAIMER

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, storage, transportation and release and is not considered a warranty or quality specification. The responsibility for the compliance with existing law and regulations lies with the receiver of the product.

M41601031504

PEL – Permissible Exposure Limit

HMIS – Hazardous Materials Identification System

TLV – Threshold Limit Value

NTP – National Toxicology Program

STEL – Short Term Exposure Limit

CEIL – Ceiling Exposure Limit

LD50 – Lethal Dose 50

LC50 – Lethal Concentration 50

F – Degree Fahrenheit

C – Degree Celsius

MSDS – Material Safety Data Sheet

CASRN – The Chemical Abstracts Service Registry Number

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. **NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS.** Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

<End of MSDS>

# MATERIAL SAFETY DATA SHEET

DATE PREPARED: February 2, 2006

SUPERSEDES: December 10, 2003

## SECTION 1 CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME *Packmaster® #2 Braided Packing*

PRODUCT CODES 41602, 44610, 44632 & 44602

COMPANY NAME



ADDRESS GARLOCK, INC.  
1666 DIVISION STREET  
PALMYRA, N.Y. 14522

PHONE NUMBER 315-597-4811 FAX 315-597-3196

### EMERGENCY PHONE

315-597-4811  
MON. - FRI.  
9:00 AM – 4:00 PM

## SECTION 2 COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

<u>COMPONENT NAME</u>	<u>CAS NUMBER</u>	<u>% WT. (Optional)</u>
Graphite	7727-42-5	
Fibrous Glass	7440-66-6	
Silica, Crystalline	14808-60-7	< 2

## SECTION 3 HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

This Style braided packing product consists of a proprietary lattice braided yarn, that consists of a glass filament core with an organic fiber jacket. Prior to braiding the yarn is impregnated with petrolatum and a synthetic wax. The braid is coated with graphite.

Adverse health effects would not be expected under normal recommended conditions of use, so long as prescribed safety precautions are practiced.

Excessive levels of some constituents can cause lung and respiratory tract disorders, including irritation, pneumoconiosis, and cancer. These effects generally occur as a result of long term (months, years) exposures to high dust levels. Maintain dust concentrations at low levels.

# MATERIAL SAFETY DATA SHEET

February 2, 2006

## Packmaster® #2 Braided Packing

### SECTION 3 HAZARDS IDENTIFICATION (Continued from Page 1)

PRODUCT CONSTITUENTS LISTED AS CARCINOGENS	IARC	OSHA	NTP
Silica, Crystalline, IARC Group 1 (sufficient evidence of carcinogenicity in humans)	Yes	No	Yes

Fiber Glass Continuous Filament  
Note: See Note No See Note

The U.S. Department of Health and Human Services, National Toxicology Program (NTP 1998, 2000, 2002) classified glass wool (respirable size) as *reasonably anticipated to be a human carcinogen*, based on sufficient evidence of carcinogenicity in experimental animals. This assessment was originally prepared in 1993–1994 for the *7th Report on Carcinogens* (NTP 1994), but has not been updated since then in the *8th, 9th, or 10th Reports on Carcinogens* (NTP 1998, 2000, 2002). Continuous filament glass, rock wool, slag wool, or refractory ceramic fibers were not listed or assessed for carcinogenicity in the *7th, 8th, 9th, or 10th Report on Carcinogens* (NTP 1994, 1998, 2000, 2002).

The International Agency for Research on Cancer (IARC 2002) concluded that epidemiologic studies published since the previous IARC (1988) assessment provided no evidence of increased risks of lung cancer or of mesothelioma from occupational exposure during the manufacture of man-made vitreous fibers and inadequate evidence overall of any excess cancer risk.

### POTENTIAL HEALTH EFFECTS

**Primary Routes of Entry:** Inhalation of dusts.  
Dermal and ocular contact.

**Acute Effects Of Overexposure:** High concentrations of dusts may be irritating to the eyes, skin, mucous membranes and respiratory tract. Skin contact may produce reddening of the skin and itching.

**Chronic Effects Of Overexposure:** Inhalation of high concentrations of dusts over prolonged periods of time may cause pneumoconiosis (a fibrotic disease in the lung tissue), silicosis which can be progressive, disabling, and may lead to death; and lung cancer.

**Conditions Aggravated by Exposure:** Pre-existing pulmonary disorders may possibly be aggravated by prolonged exposures to high concentrations of dusts.

# MATERIAL SAFETY DATA SHEET

February 2, 2006

## *Packmaster® #2 Braided Packing*

### SECTION 4 FIRST AID MEASURES (Continued From Page 2)

- Eyes:** Flush the eyes with water for at least 15 minutes. Seek medical attention if irritation develops or persists.
- Skin:** Wash contaminated skin thoroughly with soap or a mild detergent. Get medical attention if irritation persists. Dermatitis should be treated symptomatically by a physician.
- Ingestion:** No specific intervention is indicated as product is not likely to be hazardous by ingestion. Consult a physician if necessary.
- Inhalation:** Dust:  
No adverse effects are anticipated by breathing small amounts during normal and intended use. If exposed to high dust levels, then remove to fresh air. Drink water and clear throat. Blow nose to clear dust.

### SECTION 5 FIRE FIGHTING MEASURES

- |                                     |                               |
|-------------------------------------|-------------------------------|
| <b>Flash Point:</b> Not Applicable  | <b>Method:</b> Not Applicable |
| <b>Upper Flammable Limit (UFL):</b> | Not Applicable                |
| <b>Lower Flammable Limit (LFL):</b> | Not Applicable                |
| <b>Autoignition Temperature:</b>    | Not Determined                |

#### Hazardous Products of Combustion

Composition of by-products from the result of a fire or thermal decomposition will vary depending on the specific conditions. Hazardous gases/vapors possibly evolved include smoke, acrylonitrile monomer, hydrogen cyanide and carbon monoxide. There may be others unknown to us.

# MATERIAL SAFETY DATA SHEET

February 2, 2006

## *Packmaster® #2 Braided Packing*

### **SECTION 5 FIRE FIGHTING MEASURES (Continued From Page 3)**

#### **Fire fighting Instructions**

As in any fire, use a self-contained breathing apparatus (SCBA) in the pressure-demand mode in conjunction with suitable gloves and clothing .

#### **Extinguishing Media**

Water, carbon dioxide, foam, or dry chemical. Be sure to use fire extinguisher appropriate to surrounding fire.

### **SECTION 6 ACCIDENTAL RELEASE MEASURES**

#### **Steps To Be Taken In Case Material Is Released or Spilled**

No special actions are required for relatively large pieces or fragments. Prompt clean up is recommended. Personnel involved in the clean up should be wearing appropriate personal protective equipment as outlined in section 8. Material should be placed in DOT approved containers for disposal.

### **SECTION 7 HANDLING AND STORAGE**

#### **Handling**

Dust generated from this material must be managed by wet wiping or vacuuming with HEPA filtration equipped vacuum cleaners. Do not dry sweep or blow dust with compressed air. Graphite dusts are electrically conductive. Accumulations of dusts may cause shorting of electrical circuits and switches that may be affected. Dust should not be emitted to the atmosphere where they may settle on and cause shorting of outside electrical equipment. Personnel involved with handling this product should be wearing appropriate personal protective equipment as outlined in section 8.

#### **Storage**

Store in labeled closed containers and away from heat, spark, open flames & other sources of ignition. Do not store with or near incompatible materials cited in section 10.



# MATERIAL SAFETY DATA SHEET

February 2, 2006

## *Packmaster® #2 Braided Packing*

### SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT

#### Engineering Controls

**Ventilation:** If dust levels exceed the occupational exposure limits, then use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels to below recommended exposure limits. The need for local exhaust ventilation should be evaluated by a professional industrial hygienist. Local exhaust ventilation systems should be designed by a professional engineer. Maintain and test ventilation systems in accordance with OSHA regulations (29CFR 1910.94).

#### Personal Protective Equipment

**Eyes and Face:** As generally good practice, safety glasses with side shields are recommended when handling this product to prevent eye contact with particulate matter.

**Skin:** Protective gloves are recommended to prevent irritation during handling.

#### **Respiratory:**

Exposure levels that exceed PEL/TLV limits are unlikely. If exposures exceed the limits cited in this section by less than a factor of 10, use a NIOSH approved N95 respirator. If exposures exceed 10 times this limit, consult a professional industrial hygienist or your respiratory protective equipment supplier for selection of the proper equipment. The evaluation of the need for respiratory protection should be determined by a professional industrial hygienist.

### EXPOSURE GUIDELINES

<u>Component</u>	<u>(8 Hr. TWA)</u> <u>OSHA PEL</u>	<u>(8 Hr. TWA)</u> <u>ACGIH TLV</u>
Graphite (Insoluble Compounds as W)	2.0 mg/m <sup>3</sup> (respirable dust)	2.0 mg/m <sup>3</sup> (respirable dust)
Fibrous Glass		
Nonrespirable fibers and Particulate	15.0 mg/m <sup>3</sup> (total dust)	5.0 mg/m <sup>3</sup> (respirable fraction)
Respirable Particulate	5.0 mg/m <sup>3</sup> (respirable dust)	3.0 mg/m <sup>3</sup> (PNO)
Respirable particulate with fiber like dimensions (glass shards)	None Established	1 fiber/cc (respirable)
Silica, Crystalline (Quartz)	10 mg/m <sup>3</sup> / %SiO <sub>2</sub> + 2 (resp) 30 mg/m <sup>3</sup> / %SiO <sub>2</sub> + 2 (total)	0.1 mg/m <sup>3</sup> (resp)

# MATERIAL SAFETY DATA SHEET

February 2, 2006

## *Packmaster® #2 Braided Packing*

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Black Lattice Braided Packing or Rings	<b>Boiling Point:</b>	Not Applicable
<b>Odor:</b>	Slight hydrocarbon odor	<b>Freezing Point:</b>	Not Applicable
<b>VOC Content:</b>	Not Applicable	<b>Melting Point:</b>	Not Applicable
<b>pH:</b>	Not Applicable	<b>Solubility In Water:</b>	Negligible
<b>Vapor Pressure:</b>	Not Applicable	<b>Specific Gravity:</b>	Not determined
<b>Vapor Density:</b>	Not Applicable	<b>Reactivity with Water:</b>	Non Reactive

### SECTION 10 STABILITY AND REACTIVITY

**Stability:** The material is stable.

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Conditions to avoid:** Direct flame will ignite product.

**Materials to avoid:** Strong oxidizing materials.

#### **Hazardous Decomposition Products**

Composition of by-products from the result of a fire or thermal decomposition will vary depending on the specific conditions. Hazardous gases/vapors possibly evolved include smoke, acrylonitrile monomer, hydrogen cyanide and carbon monoxide. There may be others unknown to us.

# MATERIAL SAFETY DATA SHEET

DATE PREPARED: December 10, 2003

SUPERSEDES: March 20, 1998

## SECTION 1 CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME *Packmaster® #3 Braided Packing*

PRODUCT CODES 41603 & 44603

COMPANY NAME



EMERGENCY PHONE

ADDRESS

GARLOCK, INC.  
1666 DIVISION STREET  
PALMYRA, N.Y. 14522

315-597-4811  
MON. - FRI.  
9:00 AM - 4:00 PM

PHONE NUMBER

315-597-4811 FAX 315-597-3196

## SECTION 2 COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

<u>COMPONENT NAME</u>	<u>CAS NUMBER</u>	<u>% WT. (Optional)</u>
Graphite	7727-42-5	
Fibrous Glass	7440-66-6	
Silica, Crystalline	14808-60-7	< 2

## SECTION 3 HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

This Style braided packing product consists of a square braided yarn, that consists of a glass filament core with an organic fiber jacket. Prior to braiding the yarn is impregnated with petrolatum and a synthetic wax. The braid is coated with graphite.

Adverse health effects would not be expected under normal recommended conditions of use, so long as prescribed safety precautions are practiced.

Excessive levels of some constituents can cause lung and respiratory tract disorders, including irritation, pneumoconiosis, and cancer. These effects generally occur as a result of long term (months, years) exposures to high dust levels. Maintain dust concentrations at low levels.

### PRODUCT CONSTITUENTS LISTED AS CARCINOGENS

Silica, Crystalline, IARC Group 1 (sufficient evidence of carcinogenicity in humans)

IARC

Yes

OSHA

No

NTP

Yes

# MATERIAL SAFETY DATA SHEET

December 10, 2003

## *Packmaster® #3 Braided Packing*

### SECTION 3 HAZARDS IDENTIFICATION (Continued from Page 1)

#### POTENTIAL HEALTH EFFECTS

**Primary Routes of Entry:** Inhalation of dusts.  
Dermal and ocular contact.

**Acute Effects Of Overexposure:** High concentrations of dusts may be irritating to the eyes, skin, mucous membranes and respiratory tract. Skin contact may produce reddening of the skin and itching.

**Chronic Effects Of Overexposure:** Inhalation of high concentrations of dusts over prolonged periods of time may cause pneumoconiosis (a fibrotic disease in the lung tissue), silicosis which can be progressive, disabling, and may lead to death; and lung cancer.

**Conditions Aggravated by Exposure:** Pre-existing pulmonary disorders may possibly be aggravated by prolonged exposures to high concentrations of dusts.

# MATERIAL SAFETY DATA SHEET

December 10, 2003

## *Packmaster® #3 Braided Packing*

### SECTION 4 FIRST AID MEASURES (Continued From Page 2)

- Eyes:** Flush the eyes with water for at least 15 minutes. Seek medical attention if irritation develops or persists.
- Skin:** Wash contaminated skin thoroughly with soap or a mild detergent. Get medical attention if irritation persists. Dermatitis should be treated symptomatically by a physician.
- Ingestion:** No specific intervention is indicated as product is not likely to be hazardous by ingestion. Consult a physician if necessary.
- Inhalation:** Dust:  
No adverse effects are anticipated by breathing small amounts during normal and intended use. If exposed to high dust levels, then remove to fresh air. Drink water and clear throat. Blow nose to clear dust.

### SECTION 5 FIRE FIGHTING MEASURES

- |                                     |                               |
|-------------------------------------|-------------------------------|
| <b>Flash Point:</b> Not Applicable  | <b>Method:</b> Not Applicable |
| <b>Upper Flammable Limit (UFL):</b> | Not Applicable                |
| <b>Lower Flammable Limit (LFL):</b> | Not Applicable                |
| <b>Autoignition Temperature:</b>    | Not Determined                |

#### Hazardous Products of Combustion

Composition of by-products from the result of a fire or thermal decomposition will vary depending on the specific conditions. Hazardous gases/vapors possibly evolved include smoke, acrylonitrile monomer, hydrogen cyanide and carbon monoxide. There may be others unknown to us.

# MATERIAL SAFETY DATA SHEET

December 10, 2003

## *Packmaster® #3 Braided Packing*

### **SECTION 5 FIRE FIGHTING MEASURES (Continued From Page 3)**

#### **Fire fighting Instructions**

As in any fire, use a self-contained breathing apparatus (SCBA) in the pressure-demand mode in conjunction with suitable gloves and clothing .

#### **Extinguishing Media**

Water, carbon dioxide, foam, or dry chemical. Be sure to use fire extinguisher appropriate to surrounding fire.

### **SECTION 6 ACCIDENTAL RELEASE MEASURES**

#### **Steps To Be Taken In Case Material Is Released or Spilled**

No special actions are required for relatively large pieces or fragments. Prompt clean up is recommended. Personnel involved in the clean up should be wearing appropriate personal protective equipment as outlined in section 8. Material should be placed in DOT approved containers for disposal.

### **SECTION 7 HANDLING AND STORAGE**

#### **Handling**

Dust generated from this material must be managed by wet wiping or vacuuming with HEPA filtration equipped vacuum cleaners. Do not dry sweep or blow dust with compressed air. Graphite dusts are electrically conductive. Accumulations of dusts may cause shorting of electrical circuits and switches that may be affected. Dust should not be emitted to the atmosphere where they may settle on and cause shorting of outside electrical equipment. Personnel involved with handling this product should be wearing appropriate personal protective equipment as outlined in section 8.

#### **Storage**

Store in labeled closed containers and away from heat, spark, open flames & other sources of ignition. Do not store with or near incompatible materials cited in section 10.

# MATERIAL SAFETY DATA SHEET

December 10, 2003

## Packmaster® #3 Braided Packing

### SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT

#### Engineering Controls

**Ventilation:** If dust levels exceed the occupational exposure limits, then use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels to below recommended exposure limits. The need for local exhaust ventilation should be evaluated by a professional industrial hygienist. Local exhaust ventilation systems should be designed by a professional engineer. Maintain and test ventilation systems in accordance with OSHA regulations (29CFR 1910.94).

#### Personal Protective Equipment

**Eyes and Face:** As generally good practice, safety glasses with side shields are recommended when handling this product to prevent eye contact with particulate matter.

**Skin:** Protective gloves are recommended to prevent irritation during handling.

#### Respiratory:

Exposure levels that exceed PEL/TLV limits are unlikely. If exposures exceed the limits cited in this section by less than a factor of 10, use a NIOSH approved N95 respirator. If exposures exceed 10 times this limit, consult a professional industrial hygienist or your respiratory protective equipment supplier for selection of the proper equipment. The evaluation of the need for respiratory protection should be determined by a professional industrial hygienist.

### EXPOSURE GUIDELINES

#### Component

	<u>(8 Hr. TWA)</u> <u>OSHA PEL</u>	<u>(8 Hr. TWA)</u> <u>ACGIH TLV</u>
Graphite (Insoluble Compounds as W)	2.0 mg/m <sup>3</sup> (respirable dust)	2.0 mg/m <sup>3</sup> (respirable dust)
Fibrous Glass		
Nonrespirable fibers and Particulate	15.0 mg/m <sup>3</sup> (total dust)	5.0 mg/m <sup>3</sup> (respirable fraction)
Respirable Particulate	5.0 mg/m <sup>3</sup> (respirable dust)	3.0 mg/m <sup>3</sup> (PNOC)
Respirable particulate with fiber like dimensions (glass shards)	None Established	1 fiber/cc (respirable)
Silica, Crystalline (Quartz)	10 mg/m <sup>3</sup> / %SiO <sub>2</sub> + 2 (resp) 30 mg/m <sup>3</sup> / %SiO <sub>2</sub> + 2 (total)	0.1 mg/m <sup>3</sup> (resp)

# MATERIAL SAFETY DATA SHEET

December 10, 2003

## *Packmaster® #3 Braided Packing*

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Black Square Braided Packing or Rings	<b>Boiling Point:</b>	Not Applicable
<b>Odor:</b>	Slight hydrocarbon odor	<b>Freezing Point:</b>	Not Applicable
<b>VOC Content:</b>	Not Applicable	<b>Melting Point:</b>	Not Applicable
<b>pH:</b>	Not Applicable	<b>Solubility In Water:</b>	Negligible
<b>Vapor Pressure:</b>	Not Applicable	<b>Specific Gravity:</b>	Not determined
<b>Vapor Density:</b>	Not Applicable	<b>Reactivity with Water:</b>	Non Reactive

### SECTION 10 STABILITY AND REACTIVITY

**Stability:** The material is stable.

**Hazardous Polymerization:** Hazardous polymerization will not occur.

**Conditions to avoid:** Direct flame will ignite product.

**Materials to avoid:** Strong oxidizing materials.

#### **Hazardous Decomposition Products**

Composition of by-products from the result of a fire or thermal decomposition will vary depending on the specific conditions. Hazardous gases/vapors possibly evolved include smoke, acrylonitrile monomer, hydrogen cyanide and carbon monoxide. There may be others unknown to us.



## MATERIAL SAFETY DATA SHEET

December 10, 2003

### *Packmaster® #3 Braided Packing*

#### **SECTION 11 TOXICOLOGICAL INFORMATION**

Toxicity data is available on the individual components. Call 315/597-3080 for information.

#### **SECTION 12 REGULATORY INFORMATION**

Dispose of in accordance with local, state, and federal regulations. Disposal in an EPA approved landfill is recommended.

Warning, this product contains a mineral known to the state of California to cause cancer (silica, crystalline).

#### **SECTION 13 OTHER INFORMATION**

This MSDS is prepared to safeguard the health of workers and to comply with the requirements of 29CFR 1910.1200. Consult your employer before working with this material.

##### **DISCLAIMER**

The information provided herein is accurate to the best of our knowledge; but no warranty, expressed or implied, is made.

M41603

# MATERIAL SAFETY DATA SHEET

February 2, 2006

## *Packmaster® #2 Braided Packing*

### **SECTION 11 TOXICOLOGICAL INFORMATION**

Toxicity data is available on the individual components. Call 315/597-3080 for information.

### **SECTION 12 ECOLOGICAL INFORMATION**

Bioaccumulation is not expected, as product is insoluble in water.

### **SECTION 13 DISPOSAL INFORMATION**

Dispose of in accordance with local, state, and federal regulations. Land fill is normally recommended.

### **SECTION 14 TRANSPORTATION INFORMATION**

D.O.T. Shipping Name: Not Regulated

### **SECTION 15 REGULATORY INFORMATION**

Warning, this product contains a mineral known to the state of California to cause cancer (silica, crystalline).

### **SECTION 16 OTHER INFORMATION**

This MSDS is prepared to safeguard the health of workers and to comply with the requirements of 29CFR 1910.1200. Consult your employer before working with this material.

#### DISCLAIMER

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, storage, transportation and release and is not considered a warranty or quality specification. The responsibility for the compliance with existing law and regulations lies with the receiver of the product.

M416020206

# Material Safety Data Sheet



Flammable Gas Mixture: Acetylene / Carbon Dioxide / Carbon Monoxide / Methyl Acetylene

## Section 1. Chemical product and company identification

**Product Name** : Flammable Gas Mixture: Acetylene / Carbon Dioxide / Carbon Monoxide / Methyl Acetylene  
**Supplier** : AIRGAS INC., on behalf of its subsidiaries  
259 North Radnor-Chester Road  
Suite 100  
Radnor, PA 19087-5283  
1-610-687-5253  
**Product use** : Synthetic/Analytical chemistry.  
**MSDS#** : 006581  
**Date of Preparation/Revision** : **11/7/2006.**  
**In case of emergency** : 1-866-734-3438

## Section 2. Hazards identification

**Physical state** : Gas.  
**Emergency overview** : Warning!  
FLAMMABLE GAS.  
CONTENTS UNDER PRESSURE.  
HARMFUL IF INHALED.  
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:  
BLOOD, LUNGS, CARDIOVASCULAR SYSTEM, RESPIRATORY TRACT, SKIN,  
CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.  
VAPOR MAY CAUSE FLASH FIRE.  
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.  
Avoid contact with skin and clothing. Avoid breathing gas. Keep away from heat, sparks and flame. Do not puncture or incinerate container. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.  
Contact with rapidly expanding gases can cause frostbite.  
**Routes of entry** : Inhalation,Dermal,Eyes  
**Potential acute health effects**  
**Eyes** : Moderately irritating to the eyes.  
**Skin** : Moderately irritating to the skin.  
**Inhalation** : Toxic by inhalation. Moderately irritating to the respiratory system.  
**Ingestion** : Ingestion is not a normal route of exposure for gases  
**Potential chronic health effects** : **CARCINOGENIC EFFECTS** Not available.  
**MUTAGENIC EFFECTS** Not available.  
**TERATOGENIC EFFECTS**: Not available.  
**Medical conditions aggravated by overexposure** : Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.  
See toxicological Information (section 11)

## Section 3. Composition, Information on Ingredients

<u>Name</u>	<u>CAS number</u>	<u>% Volume</u>	<u>Exposure limits</u>
Acetylene	74-86-2	50 - 99	<b>NIOSH REL (United States, 6/2001).</b> CEIL: 2662 mg/m <sup>3</sup> Form: All forms CEIL: 2500 ppm Form: All forms
Carbon Dioxide	124-38-9	0.5 - 20	<b>ACGIH TLV (United States, 9/2004).</b> STEL: 54000 mg/m <sup>3</sup> 15 minute(s). Form: All forms STEL: 30000 ppm 15 minute(s). Form: All forms TWA: 9000 mg/m <sup>3</sup> 8 hour(s). Form: All forms

**Flammable Gas Mixture: Acetylene / Carbon Dioxide / Carbon Monoxide / Methyl Acetylene**

			TWA: 9000 mg/m <sup>3</sup> 8 hour(s). Form: All forms TWA: 5000 ppm 8 hour(s). Form: All forms <b>NIOSH REL (United States, 6/2001).</b> STEL: 54000 mg/m <sup>3</sup> 15 minute(s). Form: All forms STEL: 30000 ppm 15 minute(s). Form: All forms TWA: 9000 mg/m <sup>3</sup> 10 hour(s). Form: All forms TWA: 5000 ppm 10 hour(s). Form: All forms <b>OSHA PEL (United States, 6/1993).</b> TWA: 9000 mg/m <sup>3</sup> 8 hour(s). Form: All forms TWA: 5000 ppm 8 hour(s). Form: All forms <b>ACGIH TLV (United States, 1/2005). Notes: Substances for which there is a Biological Exposure Index or Indices</b> TWA: 29 mg/m <sup>3</sup> 8 hour(s). Form: All forms TWA: 25 ppm 8 hour(s). Form: All forms <b>NIOSH REL (United States, 12/2001).</b> CEIL: 229 mg/m <sup>3</sup> Form: All forms CEIL: 200 ppm Form: All forms TWA: 40 mg/m <sup>3</sup> 10 hour(s). Form: All forms TWA: 35 ppm 10 hour(s). Form: All forms <b>OSHA PEL (United States, 8/1997).</b> TWA: 55 mg/m <sup>3</sup> 8 hour(s). Form: All forms TWA: 50 ppm 8 hour(s). Form: All forms <b>ACGIH TLV (United States, 1/2005).</b> TWA: 1640 mg/m <sup>3</sup> 8 hour(s). Form: All forms TWA: 1000 ppm 8 hour(s). Form: All forms <b>NIOSH REL (United States, 12/2001).</b> TWA: 1650 mg/m <sup>3</sup> 10 hour(s). Form: All forms forms TWA: 1000 ppm 10 hour(s). Form: All forms <b>OSHA PEL (United States, 8/1997).</b> TWA: 1650 mg/m <sup>3</sup> 8 hour(s). Form: All forms TWA: 1000 ppm 8 hour(s). Form: All forms
Carbon Monoxide	630-08-0	0.0025 - 20	
Methyl Acetylene	74-99-7	0.1 - 10	

**Section 4. First aid measures**

No action shall be taken involving any personal risk or without suitable training. If fumes are still suspected to be present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

- Eye contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
- Skin contact** : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- Ingestion** : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

**Section 5. Fire fighting measures**

- Flammability of the product** : Flammable.
- Auto-ignition temperature** : The lowest known value is 304.85°C (580.7°F) (Acetylene).
- Flash point** : The lowest known value is Closed cup: -18.15°C (-0.7°F). (Acetylene)
- Flammable limits** : The greatest known range is Lower: 2.5% Upper: 82% (Acetylene)
- Products of combustion** : These products are carbon oxides (CO, CO<sub>2</sub>).

## **Flammable Gas Mixture: Acetylene / Carbon Dioxide / Carbon Monoxide / Methyl Acetylene**

**Fire hazards in presence of various substances** : Extremely flammable in presence of open flames, sparks and static discharge, of heat, of oxidizing materials.

**Fire fighting media and instructions** : In case of fire, use water spray (fog), foam, dry chemicals, or CO<sub>2</sub>.

If involved in fire, shut off flow immediately if it can be done without risk. Apply water from a safe distance to cool container and protect surrounding area.

Extremely flammable. Gas may accumulate in confined areas, travel considerable distance to source of ignition and flash back causing fire or explosion.

**Special protective equipment for fire-fighters** : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

## **Section 6. Accidental release measures**

**Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## **Section 7. Handling and storage**

**Handling** : Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire, minimize ignition sources. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Do not puncture or incinerate container. Wash thoroughly after handling. High pressure gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

**Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

## **Section 8. Exposure Controls, Personal Protection**

**Engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. The engineering controls also need to keep gas, vapor or dust concentrations below any explosive limits. Use explosion-proof ventilation equipment.

### **Personal protection**

**Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

**Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

**Hands** : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Personal protection in case of a large spill** : Full chemical resistant suit and self-contained breathing apparatus only by trained and authorized persons.

**Consult local authorities for acceptable exposure limits.**

## Section 9. Physical and chemical properties

<b>Molecular weight</b>	: Not applicable.
<b>Molecular formula</b>	: Not applicable.
<b>Boiling/condensation point</b>	: Not available.
<b>Melting/freezing point</b>	: -102.77°C (-153°F) based on data for: Methyl Acetylene. Weighted average: -166.84°C (-268.3°F)
<b>Critical temperature</b>	: The lowest known value is -140.1°C (-220.2°F) (Carbon monoxide).
<b>Vapor density</b>	: The highest known value is 1.53 (Air = 1) (Carbon Dioxide). Weighted average: 1.03 (Air = 1)
<b>Specific Volume (ft<sup>3</sup>/lb)</b>	: Not applicable.
<b>Gas Density (lb/ft<sup>3</sup>)</b>	: Weighted average: 0.07

## Section 10. Stability and reactivity

<b>Stability and reactivity</b>	: The product is stable.
<b>Incompatibility with various substances</b>	: Highly reactive with oxidizing agents.

## Section 11. Toxicological information

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Carbon Monoxide	LC50	3760 ppm (1 hour(s))	Inhalation	Rat
	LC50	2444 ppm (4 hour(s))	Inhalation	Mouse
Methyl Acetylene	LC50	>100000 ppm (1 hour(s))	Inhalation	Rat

**Chronic effects on humans** : Contains material which causes damage to the following organs: blood, lungs, cardiovascular system, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

**Other toxic effects on humans** : No specific information is available in our database regarding the other toxic effects of this material for humans.

### Specific effects

<b>Carcinogenic effects</b>	: No known significant effects or critical hazards.
<b>Mutagenic effects</b>	: No known significant effects or critical hazards.
<b>Reproduction toxicity</b>	: No known significant effects or critical hazards.




## Section 12. Ecological information

<b>Products of degradation</b>	: These products are carbon oxides (CO, CO <sub>2</sub> ) and water.
<b>Toxicity of the products of biodegradation</b>	: The products of degradation are less toxic than the product itself.
<b>Environmental fate</b>	: Not available.
<b>Environmental hazards</b>	: No known significant effects or critical hazards.
<b>Toxicity to the environment</b>	: Not available.

## Section 13. Disposal considerations

**Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation. Return cylinders with residual product to Airgas, Inc. Do not dispose of locally.**

## Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
<b>DOT Classification</b>	UN1954	COMPRESSED GAS, FLAMMABLE, N.O.S.	2.1	Not applicable (gas).		-
<b>TDG Classification</b>	UN1954	COMPRESSED GAS, FLAMMABLE, N.O.S.	2.1	Not applicable (gas).		<p><b>Explosive Limit and Limited Quantity Index</b> 0.125</p> <p><b>ERAP Index</b> 3000</p> <p><b>Passenger Carrying Ship Index</b> Forbidden</p> <p><b>Passenger Carrying Road or Rail Index</b> Forbidden</p>
<b>Mexico Classification</b>	UN1954	COMPRESSED GAS, FLAMMABLE, N.O.S.	2.1	Not applicable (gas).		-

## Section 15. Regulatory information

### United States

**U.S. Federal regulations** : TSCA 8(b) inventory: Acetylene; Carbon Dioxide; Methyl Acetylene; Carbon monoxide  
 SARA 302/304/311/312 extremely hazardous substances: No products were found.  
 SARA 302/304 emergency planning and notification: No products were found.  
 SARA 302/304/311/312 hazardous chemicals: Acetylene; Carbon Dioxide; Methyl Acetylene; Carbon monoxide  
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Acetylene: Fire hazard, reactive, Sudden Release of Pressure, Immediate (Acute) Health Hazard;  
 Carbon Dioxide: Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Methyl Acetylene: Fire hazard, reactive; Carbon monoxide: Fire hazard, Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard  
 Clean Water Act (CWA) 307: No products were found.  
 Clean Water Act (CWA) 311: No products were found.  
 Clean air act (CAA) 112 accidental release prevention: Acetylene; Methyl Acetylene  
 Clean air act (CAA) 112 regulated flammable substances: Acetylene; Methyl Acetylene  
 Clean air act (CAA) 112 regulated toxic substances: No products were found.

**State regulations** : Pennsylvania RTK: Acetylene: (generic environmental hazard); Carbon Dioxide: (generic environmental hazard); Methyl Acetylene: (generic environmental hazard); Carbon monoxide: (environmental hazard, generic environmental hazard)  
 Massachusetts RTK: Acetylene; Carbon Dioxide; Methyl Acetylene; Carbon monoxide  
 New Jersey: Acetylene; Carbon Dioxide; Methyl Acetylene; Carbon monoxide

**Flammable Gas Mixture: Acetylene / Carbon Dioxide / Carbon Monoxide / Methyl Acetylene**

**California prop. 65** : **WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>	<u>No significant risk level</u>	<u>Maximum acceptable dosage level</u>
Carbon Monoxide	No.	Yes.	No.	No.

**Canada WHMIS (Canada)** : Class A: Compressed gas.  
 Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).  
 Class D-2A: Material causing other toxic effects (VERY TOXIC).  
 CEPA DSL: Acetylene; Carbon Dioxide; Methyl Acetylene; Carbon monoxide

**Section 16. Other information**

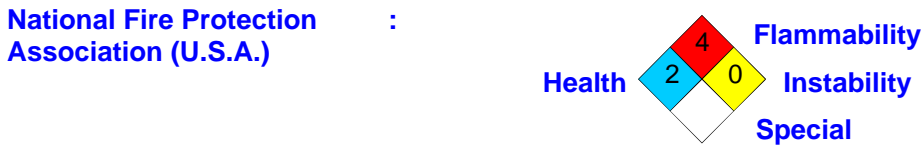
**United States**

**Label Requirements** : FLAMMABLE GAS.  
 CONTENTS UNDER PRESSURE.  
 HARMFUL IF INHALED.  
 CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:  
 BLOOD, LUNGS, CARDIOVASCULAR SYSTEM, RESPIRATORY TRACT, SKIN,  
 CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.  
 VAPOR MAY CAUSE FLASH FIRE.  
 MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

**Canada Label Requirements** : Class A: Compressed gas.  
 Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).  
 Class D-2A: Material causing other toxic effects (VERY TOXIC).

**Hazardous Material Information System (U.S.A.)** :

Health	*	2
Fire hazard		4
Reactivity		0
Personal protection		C



**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



# MATERIAL SAFETY DATA SHEET

CODE: M/L 1136

This Material Safety Data Sheet complies with the U.S. OSHA Hazard Communication Standard 29CFR 1910.1200

## PRODUCT: Butane Fuel



COMMON NAME OR SYNONYMS: Includes trade name products: Dutch Boy® - 1oz Butane Fuel

**TARACORP**

NFPA/HMIS HAZARD CODES: HEALTH: 1/1 FIRE: 4/4 REACTIVITY: 0/0 SPECIAL: NA

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

### SECTION I

#### SECTION I CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL FAMILY: Hydrocarbon, LP Gas  
CHEMICAL NAME: LP Gas, A-28  
FORMULA: C<sub>4</sub>H<sub>10</sub>  
PRODUCT CAS No: LIQUEFIED PETROLEUM GAS  
PRODUCT USE: Torch Fuel  
SUPPLIER: Taracorp  
ADDRESS: 1690 Lowery Street, Winston-Salem, NC 27101  
PHONE: (336) 777-8600

ISSUE DATE: March 2004  
EMERGENCY PHONE: 800-424-9300  
(Transportation/Chemtrec)

### SECTION II COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	VOLUME %
N, Butane, volume	106-97-8	22
Isobutane, volume	75-28-5	78

Note: The percentage by volume values reported for the ingredients in this product represent approximate formulation values.  
Note: See Section VIII for the Exposure Limits and Section XI for the Toxicological Information.

### SECTION III PHYSICAL DATA

Boiling Point -11.7F  
Pressure in can at 70°F Approx. 28 psig  
Vapor Density (Air=1) Greater than 2  
Solubility in water Less than 0.1% by weight @70F  
Specific Gravity (Water=1) 0.5676  
Percent Volatile by weight 100%  
Evaporation Rate (BuAcc=1) Gas  
Appearance and odor Liquefied compressed gas, flash evaporates at room temperature when released from can, colorless gas with strong mercaptan (skunk-like) odor due to stenching agent added to gas for leak detection purposes.

### SECTION IV HAZARDOUS REACTIVITY

Stability Stable when stored as a liquid in cans under its own pressure.  
Conditions to avoid Contact with sparks, open flame or any source of ignition.  
Hazardous Polymerization Will not occur  
Hazardous Decomposition Products May produce carbon monoxide when oxidized with deficiency of oxygen.

### SECTION V FIRE AND EXPLOSION DATA

Flammability Category Extremely Flammable (Reference - Consumer Product Commission, flame projection test for aerosol products, per 16 CFR 1500.45)  
Flash Point Less than -117°F  
Flammable Limits LEL% 1.8 UEL% 8.4  
Extinguishing Media If feasible, stop flow of gas. Use water to cool fire-exposed cans, surroundings and to protect personnel working on shut off. Water spray, dry powder or carbon dioxide can be directed at flame area, if gas flow cannot be stopped, to reduce fire intensity.  
**DO NOT COMPLETELY EXTINGUISH FLAME UNLESS GAS FLOW IS SHUT OFF!**  
Unusual Fire and Explosion Hazards This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads

easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches.

Special Fire Fighting Procedures

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus against the hazardous effects of normal products of combustion of oxygen deficiency. Petroleum gases are heavier than air and travel along the ground or into drains to possible distant ignition sources, causing an explosive flashback. Avoid possible accumulations of vapors at floor level, as vapor is heavier than air. Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals. This product is extremely flammable at all times. Keep away from any sources of inadvertent ignition, including heat, fire, sparks, or flame.

**SECTION VI HEALTH HAZARD INFORMATION**

Suggested Exposure Guideline: 1000 ppm  
Primary Route of Exposure: Inhalation, skin contact, eye contact  
Inhalation: This product is an asphyxiate and may exhibit anesthetic properties at very high concentrations. Initial symptoms of exposure at these concentrations are disorientation, lack of coordination, rapid respiration, headache, and nausea. Continued exposure may result in unconsciousness, coma, and possible death.  
Skin Contact: Vapors are not irritating. Freeze burns or frostbite possible if skin is in prolonged contact with vaporizing liquid.  
Eye Contact: Same as skin contact.  
Carcinogenicity: None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

**SECTION VII FIRST AID**

Inhalation: Remove to fresh air. Artificial respiration, consult physician.  
Skin Contact: Wash with soap and water. Remove soaked clothing to avoid prolonged skin contact.  
Eye Contact: Flush eyes well with running water for 15 minutes.  
Ingestion: NA, product is gaseous at normal temperature and pressure.

**SECTION VIII SPILL OR LEAK PROCEDURES**

Steps to be taken in case material is released or spilled: Protect from any ignition source, keep away from heat, fire, sparks, or flame. Ventilate area well. Avoid accumulation of vapor at low levels.  
Waste disposal method: Dispose of in accordance with all local, state and federal regulations. Do not puncture or incinerate.

**SECTION IX SPECIAL PROTECTION INFORMATION**

Respiration Protection: If TLV is exceeded wear NIOSH-approved self-contained breathing device or respirator.  
Ventilation: Must be adequate to maintaining airborne concentrations below established exposure limits, particularly at floor level as vapors are heavier than air.  
Protective gloves: None needed for normal use. Thermal insulated gloves when handling if prolonged exposure expected.  
Eye Protection: Safety glasses or goggles recommended

**SECTION X HANDLING AND STORAGE PRECAUTIONS**

Precautions to be taken in handling and storage: Do not store where temperature may exceed 120°F. Store away from fire, sparks, or flame. Store in suitable area for hazardous materials storage  
D.O.T. Shipping Classification: Consumer Commodity, ORM-D  
Hazard Class: None  
ID Number: None  
Label Required: Carton must be marked - Consumer Commodity ORM-D

**SECTION XI SPECIAL PRECAUTIONS**

Do not use near heat, fire, flame or sparks. Avoid excessive breathing of vapor. Do not spray in direction of body. Use only in accordance with directions.

*Notice: This data represents typical values, not product specifications. No guarantee of accuracy or completeness is made. No responsibility is assumed for any kind of loss or damages arising from use of this data.*



# MATERIAL SAFETY DATA SHEET

## Section 1: Product and Company Identification

<b>Product:</b> MAP-Pro™ Premium Hand Torch Fuel	<b>Company:</b> Worthington Cylinder Corporation
<b>Description:</b> Propylene	<b>Address:</b> 200 Old Wilson Bridge Road Columbus, Ohio 43085
<b>Date Issued:</b> February 26, 2008	<b>Information:</b> 614-438-7960
<b>Last Revised:</b> Original	<b>Emergency:</b> CHEMTREC – (800) 424-9300

## Section 2: Hazardous Ingredients and Exposure Limits

Ingredient	CAS Number	Weight %	OSHA PEL (ppm)	ACGIH TLV (ppm)
Propylene	115-07-1	99.5 – 100	Not Established	500
Propane	74-98-6	0 – 0.5	1000	1000

## Section 3: Physical and Chemical Properties

<b>Boiling Point:</b> -54 °F	<b>Vapor Pressure:</b> 109.73 psig @ 70 °F
<b>Melting Point:</b> -301 °F	<b>Vapor Density (air=1):</b> 1.5 @ 32 °F
<b>Specific Gravity:</b> 0.52 (liquid)	<b>Solubility in Water:</b> Slight
<b>Molecular Weight:</b> 42	<b>Percent Volatile by Weight:</b> 100
<b>Appearance:</b> Colorless gas	<b>Odor:</b> Hydrocarbon

## Section 4: Fire and Explosion Data

<b>Flash Point:</b> -162 °F
<b>Auto Ignition:</b> 927 °F
<b>Lower Explosion Limit:</b> 2.0% by volume in air
<b>Upper Explosion Limit:</b> 11.0% by volume in air
<b>General Fire Hazards:</b> Liquid releases vapors that readily form a flammable mixture with air. Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Vapors are heavier than air and may travel long distances to a point of ignition. Container may explode in heat or flame.
<b>Hazardous Combustion Products:</b> Carbon monoxide, carbon dioxide and various non-combusted hydrocarbons.
<b>Extinguishing Media:</b> Dry chemical, foam, carbon dioxide, Halon or water.
<b>Unusual Fire Hazards:</b> Use extreme caution when fighting liquefied petroleum gas fires. Heated containers may rupture violently and suddenly without warning due to vessel overpressure (BLEVE-boiling liquid expanding vapor explosions). If safe to do so stop the flow of gas and allow the flame to burn out. Extinguishing the flame before shutting off the supply can cause formation of explosive mixtures. In some cases it may be preferred to allow the flame to continue to burn. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat.

## Section 5: Reactivity Data

**Chemical Stability:** Stable



# MATERIAL SAFETY DATA SHEET

**Hazardous Decomposition Products:** Carbon oxides and various hydrocarbons formed when burned.

**Incompatibility:** Strong oxidizers such as nitrates, perchlorates, chlorine and fluorine.

**Hazardous Polymerization:** Does not polymerize except under special conditions (extreme temperature, pressure, oxidizers).

**Conditions to Avoid:** Sources of heat, sparks or flame.

## Section 6: Hazards Identification

**Overview:** This product contains propylene a colorless liquid that rapidly turns into a gas at standard atmospheric temperatures and pressure. Propylene has a slight hydrocarbon odor. In commerce propylene is packaged as a liquified gas under pressure. Propylene is extremely flammable and explosive. At high concentrations it acts as a simple asphixiant by diluting and displacing oxygen, particularly in confined spaces. Direct contact with liquefied product may cause freeze burns and frostbite. Use this product only in well ventilated areas and, where appropriate, proper respiratory protection and personal protective equipment should be worn.

**Primary Entry Routes:** Inhalation

**Target Organs:** Respiratory system

**Potential Health Effects:**

- **Inhalation:** Product is an anesthetic at high concentrations. Inhalation may cause central nervous system depression producing dizziness, drowsiness, headache, and similar narcotic symptoms. Extremely high concentrations can cause asphyxiation and death by displacing oxygen from the breathing atmosphere.
- **Eyes:** Vapor is generally non-irritating to the eyes. Contact with liquefied gas or rapidly expanding gases may cause freeze burns and frostbite.
- **Skin:** Vapor is generally non-irritating to the skin. Contact with liquefied gas or rapidly expanding gases may cause freeze burns and frostbite.
- **Ingestion:** Ingestion is not likely.

**Medical Conditions Aggravated by Exposure:** Chronic diseases or disorders of the respiratory system.

**Toxicological Information:** Propylene is an anesthetic and is mildly irritating to the mucous membranes. At high concentrations propylene acts as a simple asphixiant without significant potential for systemic toxicity. High concentrations can cause death due to oxygen depletion. Toxicity data can be found in the Registry of Toxic Effects of Chemical Substances available on-line from the National Institute for Occupational Safety and Health (NIOSH).

**Carcinogenic Effects:** Propylene is not identified as being carcinogenic by the International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP), ACGIH or OSHA.

## Section 7: First Aid Measures

**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes while occasionally lifting the eyelids. Seek medical attention.

**Skin Contact:** Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation or redness develops. In case of frostbite, place affected area in warm water or wrap in blankets if warm water is not available. **DO NOT USE HOT WATER.** Seek immediate medical attention.

**Inhalation:** Remove to fresh air. Administer oxygen or artificial respiration if necessary. Seek immediate medical attention.

**Ingestion:** Risk of ingestion is extremely low. Seek immediate medical attention in cases of ingestion or oral exposure.



## MATERIAL SAFETY DATA SHEET

### Section 8: Personal Protective Equipment

**Engineering Controls:** Good industrial hygiene practice requires that engineering controls be used where feasible to reduce workplace concentrations of hazardous materials.

**Ventilation:** Use adequate ventilation to keep gas and vapor concentrations of this product below the occupational exposure and flammability limits, particularly in confined spaces. Use mechanical ventilation that is explosion proof.

**Respiratory Protection:** Maintain oxygen levels above 19.5% in the workplace. Respirators must be worn if ambient concentrations of contaminants exceed prescribed exposure limits. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134). Select respirator based on its suitability to provide adequate worker protection for given work conditions, level of airborne contamination, and presence of sufficient oxygen. When required, only NIOSH approved respirators should be used.

**Protective Clothing:** Protective clothing should be worn to prevent skin contact. Protective gloves should be worn as required for welding or burning. Use insulated gloves where there is the possibility of liquid contact.

**Eye Protection:** Use safety glasses or goggles as required for welding or burning. Use splash-proof goggles or faceshield where there is the possibility of liquid contact.

### Section 9: Handling and Storage

**Handling Precautions:** Keep away from flame, sparks and excessive temperatures. Use only in well-ventilated areas.

**Storage Requirements:** Store in a cool, dry, well-ventilated area away from sources of ignition, strong oxidizers or other incompatible materials. Post "No Smoking or Open Flame" signs in the storage and use areas. Protect cylinders against physical damage. Do not cut, drill, grind or weld on empty cylinders since they may contain explosive residues. Do not attempt to refill cylinders.

**Spill Response Procedures:** Evacuate area of all unnecessary personnel. Remove or shut off all sources of ignition. Ventilate the area thoroughly.

**Disposal:** Waste disposal must be in accordance with appropriate Federal, State and local regulations.

**DOT Requirements:** Product is classified as a Hazardous Substance under 49 CFR 172.101.

Shipping Name: Propylene

Hazard Class: 2.1 (Flammable Gas)

ID Number: UN 1077

Packing Group: Not Applicable

Marking: Propylene, UN 1077

Label: Flammable Gas

Placard: Flammable Gas / UN1077

Hazardous Substance/RQ: Not Applicable

Shipping Description: Propylene, 2.1 (Flammable Gas), UN 1077

Packaging References: 49 CFR 173.304, 173.306, 173.314 and 173.315

### Section 10: Regulatory Information

#### US Federal Regulations:

- OSHA Hazardous Communication (29 CFR Part 1910.1200): This product is hazardous as defined in OSHA's Hazard Communication standard.
- OSHA Process Safety Management (29 CFR Part 1910.119): This product may be subject to OSHA's Process Safety Management of Highly Hazardous Chemicals standard.
- CERCLA Reportable Quantities (40 CFR Part 302.4): This product is not reportable under 40 CFR Part 302.4.
- Extremely Hazardous Substances (40 CFR Part 355): This product is not regulated under 40 CFR Part 355.



# MATERIAL SAFETY DATA SHEET

- SARA 311/312 Hazard Class (40 CFR Part 370): The following hazard categories apply to this product:
  - Acute Health Hazard
  - Fire Hazard
  - Sudden Release of Pressure.
- SARA 313 (40 CFR Part 372): Propylene is subject to the Toxic Release Reporting requirements of 40 CFR Part 372.
- TSCA Inventory Status: Propylene is listed on the TSCA Inventory.
- Chemical Accident Prevention Provisions (40 CFR Part 68): Propylene is subject to the reporting requirements of 40 CFR Part 68.

### State Regulations:

- California Proposition 65: Propylene is not on the California Proposition 65 lists.
- The following States are known to have specific regulations applicable to ingredients in this product:
  - Massachusetts
  - Minnesota
  - New Jersey
  - Pennsylvania
  - Rhode Island

### Other Regulations:

- Canada DSL/NDSL Inventory: Propylene is listed on the Domestic Substances List.

## Section 11: Other Information

### Hazard Ratings:

NFPA: H-1, F-4, R-1  
HMIS®: H-1, F-4, PH-1  
WHIMS: A, B1

The HMIS ratings displayed on this MSDS are from the HMIS Third Edition. There have been significant changes made to the system. "PH" stands for "Physical Hazard" as defined in the OSHA Hazardous Communication Standard and replaces the former code "R" for "Reactivity."

**Disclaimer:** All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

**Material Safety Data Sheet**

May be used to comply with  
 OSHA's Hazard Communication Standard  
 29 CFR 1910.1200. Standard must be  
 consulted for specific requirements.

**U.S. Department of Labor**

Occupational Safety and Health Administration  
 (Non-Mandatory Form)  
 Form Approved  
 OMB No. 1218-0072

Identity (As Used on Label and List)

**MAPP GAS**

*Note: Blank spaces are not permitted. If any item is not applicable, or  
 no information is available, the space must be marked to indicate  
 that.*

**SECTION I**

Supplier's Name

**Lenox**

Emergency Telephone Number

**800-628-8810**

Address

*Number, Street, City, State and ZIP Code*

**301 Chestnut Street  
 East Longmeadow, MA 01028**

Telephone Number for Information

**800-628-8810**

Date Prepared

**June 14, 2007**

Signature of Preparer (Optional)

**SECTION II - Hazardous Ingredients / Identity Information**

Hazardous Components

*Specific Chemical Identity, Common Name(s)*

**Liquefied Petroleum Gas w/ Methylacetylene  
 Liquefied Petroleum Gas CAS NO. 68476-85-7  
 Methyl Acetylene-Propadiene CAS NO. 56960-91-9**

OSHA PEL

**N/A  
 1000PPM  
 1000PPM**

ACGIH TLV

**N/A**

Other Limits Recommended

**N/A**

% (optional)

**56.0  
 44.0**

NFPA HAZARD RATINGS

**Health - 2  
 Flammability - 4  
 Reactivity - 0**

HMIS RATINGS

**Health -1  
 Flammability - 4  
 Reactivity - 0**

**Notes****SECTION III - Physical / Chemical Characteristics**

Boiling Point

**-54° F to -10° F**Specific Gravity (H<sub>2</sub>O - 1)**0.571**

Vapor Pressure (mm Hg)

**@ 70° F 97 psig**

Melting Point

**N/A**

Vapor Density (AIR=1)

**1.48**

Evaporation Rate

Butyl Acetate -1)

**N/A**

Solubility in Water

**Slight**

Appearance and Odor

**Colorless - unpleasant odor at approx. 100ppm****SECTION IV - Fire and Explosion Hazard Data**

Flash Point (Method Used)

**Closed Cup -156° F**

Flammable Limits

**In air by volume**

LEL

**3.0**

UEL

**11.0**

Extinguishing Media

**Eliminate oxygen source or stop flow of gas. Use water to cool cylinder.  
 Dry chemical or CO<sub>2</sub> to reduce oxygen.**

Special Fire Fighting Procedures

**Cool cylinders with water. Keep personnel away.**

**Unusual Fire and Explosion Hazards Auto Ignition temp. 850° F. Keep ignition sources away from cylinder and  
 continue to cool cylinder until gas flow is shut off. Escaping gas from cylinder may be ignited.**

**SECTION V - Reactivity Data**

Stability →

**Unstable  
 Stable X**

Conditions to Avoid

**Do not expose to temperatures above 125° F.**

Incompatibility (Materials to Avoid)

**Extremely flammable. Avoid uncontrolled contact with oxidizers.**

Hazardous Decomposition or Byproducts

**None**

Hazardous Polymerization →

**May Occur  
 Will Not Occur X**

Conditions to Avoid

**N/A**

**SECTION VI - Health Hazard Data**

Routes of Entry →	Inhalation? <b>YES</b>	Skin? <b>YES</b>	Ingestion? <b>UNLIKELY</b>
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Health Hazards (Acute and Chronic)

**Asphyxiant. May reduce oxygen required for breathing. Liquid gas may freeze skin.**

Carcinogenicity →	NTP? <b>N/A</b>	IARC Monographs? <b>N/A</b>	OSHA Regulated? <b>NO</b>
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Signs and Symptoms of Exposure

**Dizziness to unconsciousness if high concentrations of gas replace oxygen for breathing.**

Medical Conditions Generally Aggravated by Exposure

**N/A**

Emergency and First Aid Procedures

**Remove person to fresh air.. If unconscious, seek medical attention.**

Warning

**This fuel, and byproducts of combustion of this fuel, contain chemicals known to the State of California to cause cancer, birth defects, and other reproductive harm.****SECTION VII - Precautions for Safe Handling and Use**

Steps to be Taken in Case Material is Released or Spilled

**Remove ignition sources. Ventilate area.**

Waste Disposal Method

**Vent to atmosphere in outdoor area free of all sources of ignition.**

Precautions to be Taken in Handling and Storing

**Store in well ventilated area away from all ignition sources.  
Store at temperatures below 125° F. Store out of direct sunlight.**

Other Precautions

**N/A****SECTION VIII - Control Measures**

Respiratory Protection (Specify Type)

**Not required with normal use.**

Ventilation →	Local Exhaust <b>Advisable when welding.</b>	Mechanical (General) <b>N/A</b>	Special <b>N/A</b>	Other <b>N/A</b>
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Protective Gloves <b>Advisable when welding.</b>	Eye Protection <b>Use filter shade No. 4 or darker when welding.</b>
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Other Protective Clothing or Equipment

**N/A**

Work / Hygienic Practices

**N/A****SECTION IX - Shipping Information**

WHMIS Classification: A - Compressed Gas & B1-Flammable Gas		Class: 2.1	
DOT	Proper Shipping Name Methyl Acetylene and Propadiene Mixtures, Stabilized	Hazard Classification Flammable Gas	UN. No. 1060





# AUX SABLE<sup>TM</sup>

**HMIS Index:**

0 - Minimal  
1 - Slight  
2 - Moderate  
3 - Serious  
4 - Severe

## MATERIAL SAFETY DATA SHEET

### PROPANE

**HMIS Rating:**

1 - Health  
4 - Flammability  
0 - Reactivity

MSDS has been prepared in accordance with ANSI standard Z400.1-1993 and EEC Directive 91/155/EEC.

### SECTION I - Chemical Product and Company Identification

**Trade Name**

PROPANE

**Product Type**

Liquefied Petroleum Gas

**Date Revised**

December 2000

**Manufacturer/Supplier:** Aux Sable Liquid Products, Inc.  
Channahon, IL 60410

**TELEPHONE**

815-941-5800

**FACSIMILE**

815-941-5801

**Emergency Telephone No.**

CHEMTREC (U.S.) 800-424-9300

CHEMTREC (Intl.) 703-527-3887

CANUTECH (Canada) 613-996-6666

### SECTION II - Composition/Information on Ingredients

**Substance Trivial Name**

Propane

**Formal Name**

n-Propane

**Chemical Family**

Organic Gas

**Chemical Formula**

$\text{CH}_3\text{CH}_2\text{CH}_3$

**Molecular Weight**

44.1

**CAS No.**

74-98-6

**% by Weight**

100

**Trade Names and Synonyms**

LPG, Bottled gas, Dimethyl methane, n-Propane, Propyl hydride

**Material Uses**

Organic synthesis, household and industrial fuel, manufacture of ethylene, extractant, solvent, refrigerant, gas enricher, aerosol propellant, mixture for bubble chambers.

### SECTION III - Hazards Identification

**Main Hazards**

Extremely flammable gas. Breathing high concentrations (>1%) may have an anesthetic effect. IF OXYGEN CONTENT IS DEPLETED BELOW 19.5%, ASPHYXIATION MAY OCCUR. Contact with skin will cause frostbite.

**Potential Health Effects**

**Eye:** Frostbite

### SECTION III - Hazards Identification - Continued

**Skin:** Frostbite

**Ingestion:** Frostbite

**Inhalation:** May cause asphyxiation

**Chronic (Cancer Info.):** Not listed as a carcinogen by IARC, NTP, Z List or OSHA.

**Teratology:** None identified.

**Reproduction Info.:** None identified.

**Target Organs:** Central nervous system

### SECTION IV - First Aid Measures

**Inhalation:** Remove exposed individual to fresh air. Give mouth-to-mouth artificial respiration and supplemental oxygen.

**Eyes:** Immediately flush lightly with plenty of warm water for at least 15 minutes. Get medical attention.

**Skin:** Immediately flush lightly with plenty of warm water for at least 15 minutes. Get medical attention.

**Advice to Physicians**

Treat symptomatically for lung or eye irritation if present, frostbite or asphyxiation.

### SECTION V - Fire Fighting Measures

<b>Extinguishing Media</b> Water fog, carbon dioxide or dry chemical.	<b>Unsuitable Media</b> Not Applicable	<b>Flash Point</b> -156°F	<b>Flash Point Method</b> Closed Cup
<b>Lower Explosive Limit</b> 2.1%	<b>Upper Explosive Limit</b> 9.5%	<b>Ignition in Air</b> Will ignite if exposed to open sparks, flame or sufficient heat.	
<b>Flammability Classification</b> Flammable gas.		<b>Autoignition Temperature</b> 842° F	
<b>Fire Fighting Procedure</b> If possible without risk, shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with powder, carbon dioxide. Cool containers with water spray.			
<b>Protective Equipment</b> Standard personal protective equipment for structural firefighting.		<b>Unusual Fire Hazards</b> See Section III.	

### SECTION VI - Accidental Release Measures

**Personal Precautions**

If a leak occurs, FIRST REMOVE ALL SOURCES OF IGNITION, then the main valve should be turned off and all personnel evacuated. Do not reenter the contaminated area until verifying that the area has been ventilated.

## SECTION VI - Accidental Release Measures - Continued

### Spill Cleanup Measures

Isolate the area until gas has dispersed. No smoking, flames/flares in area! Keep unnecessary people away.

### Environmental Precautions

REPORTABLE QUANTITY (RQ): 100 LBS

## SECTION VII - Handling and Storage

### Handling & Storage Precautions

**Handling:** This compound is extremely flammable and vapors may travel long distances to a point of ignition and then flash back. It is an asphyxiant and narcotic in high concentrations. When heated to decomposition it emits acrid smoke and toxic fumes of carbon monoxide and unidentified organic compounds.

**Storage:** Observe all federal, state & local Regulations when storing this substance. Store away from incompatible substances. Keep away from all ignition sources. Store at ambient temperatures.

### Hygienic Practices

Wash thoroughly after handling. Contact lenses should not be worn.

### Special Precautions

Keep away from sources of ignition.

## SECTION VIII - Exposure Controls/Personal Protection

### Inhalation Standards

PEL (U.S.) = 1000 ppm.

IDLH = 2100 ppm [10%LEL]

### Eye-Face Protection

Safety glasses with side shields or goggles recommended to prevent eye contact.

### Skin Protection

Will cause frostbite, protect skin from contact

### Protective Clothing

For the liquid, wear appropriate clothing to prevent frostbite, such as cold insulating gloves.

### Respiratory Protection

Approved respirator recommended for concentrations above applicable exposure limit. Positive pressure supplied air breathing apparatus should be used in unknown air concentrations.

### Engineering Controls

Use in well ventilated area away from sources of ignition. DO NOT ENTER CONFINED SPACES UNLESS ADEQUATELY VENTILATED.

### Other Protective Measures

Prevent skin and eye contact.

## SECTION IX - Physical and Chemical Properties

### Physical State

Colorless gas

### Color

Colorless

### Odor

Colorless, odorless gas. [Note: A foul-smelling odorant is often added when used for fuel purposes]

### Odor Threshold

NA

### pH

Not Applicable

### Boiling Point

-44° F

### SECTION IX - Physical and Chemical Properties - Continued

<b>Evaporation Rate</b> Not Applicable	<b>Melting/Freezing Point</b> -306 F	<b>% Volatile by Volume</b> 100
<b>Solubility in Water</b> 62.4 ppm in water @ 77°F	<b>Specific Gravity</b> 0.5853 @ -133°F/ 39.2° F	<b>Vapor Density</b> 1.55, Vapors are heavier than air.
<b>Vapor Pressure</b> 6384 mmHG @ 70° F	<b>Viscosity</b> No Data	<b>Critical Temperature/Pressure</b> 206.3° F & 617.3 psi

### SECTION X - Stability and Reactivity

<b>Chemical Stability</b> Stable	<b>Conditions to Avoid</b> None	<b>Incompatible Materials</b> Strong oxidizers, chlorine dioxide
<b>Reactivity</b> Stable	<b>Hazardous Decomposition</b> Carbon monoxide, carbon dioxide	<b>Hazardous Polymerization</b> None

### SECTION XI - Toxicological Information

<b>Routes of Exposure</b> Inhalation, eye and skin contact.	<b>Acute Inhalation Effect:</b> Exposure above exposure limits may cause anesthetic effect, and dizziness. Exposures over 1% will cause asphyxiation.	<b>Acute Ingestion Effect:</b> None expected.
<b>Acute Eye Effect</b> May cause frostbite w/redness, pain & blurred vision	<b>Acute Skin Effect</b> May cause frostbite w/redness, tingling & pain/numb. Skin may become hard & white & develop blisters	
<b>Chronic Inhalation Effect:</b> None Expected		
<b>Chronic Ingestion Effect</b> None expected.	<b>Chronic Eye Effect</b> None expected.	<b>Chronic Skin Effect</b> None expected.
<b>Sensitization to Material</b> None expected.	<b>Medical Conditions Aggravated</b> Dermatitis.	<b>Synergistic Materials</b> None expected.
<b>Mutagenicity</b> No Data	<b>Reproductive Toxicity</b> None known.	<b>Teratogenicity</b> None known.
<b>Carcinogenicity</b> Not listed as a carcinogen by IARC, NTP, Z List or OSHA.		
<b>LD<sub>50</sub> for Material</b> N/A	<b>LC<sub>50</sub> for Material</b> No Data	

## SECTION XII - Ecological Information

<b>Mobility</b> Medium in soil	<b>Persistence/Degradability</b> Insignificant	<b>Bio-Accumulation</b> Insignificant
<b>Ecotoxicity</b> No Data		

## SECTION XIII - Disposal Considerations

**Disposal Information**  
Dispose of in accordance with federal, local, and with other necessary technical regulations following consultation with waste expert(s) and the responsible authorities.

## SECTION XIV - Transport Information

<b>UN Number</b> 1978	<b>UN Proper Shipping Name</b> Propane	<b>UN Class</b> 2.1
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## SECTION XV - Regulatory Information

**National Registries:** Propane, CAS No. 74-98-6

**Canada:** CEPA, Canadian Environmental Protection Act, 6th Amendment, Domestic Substance List, CAS No. 74-98-6.

**United States:** TSCA, Toxic Substance Control Act, CAS No. 74-98-6.

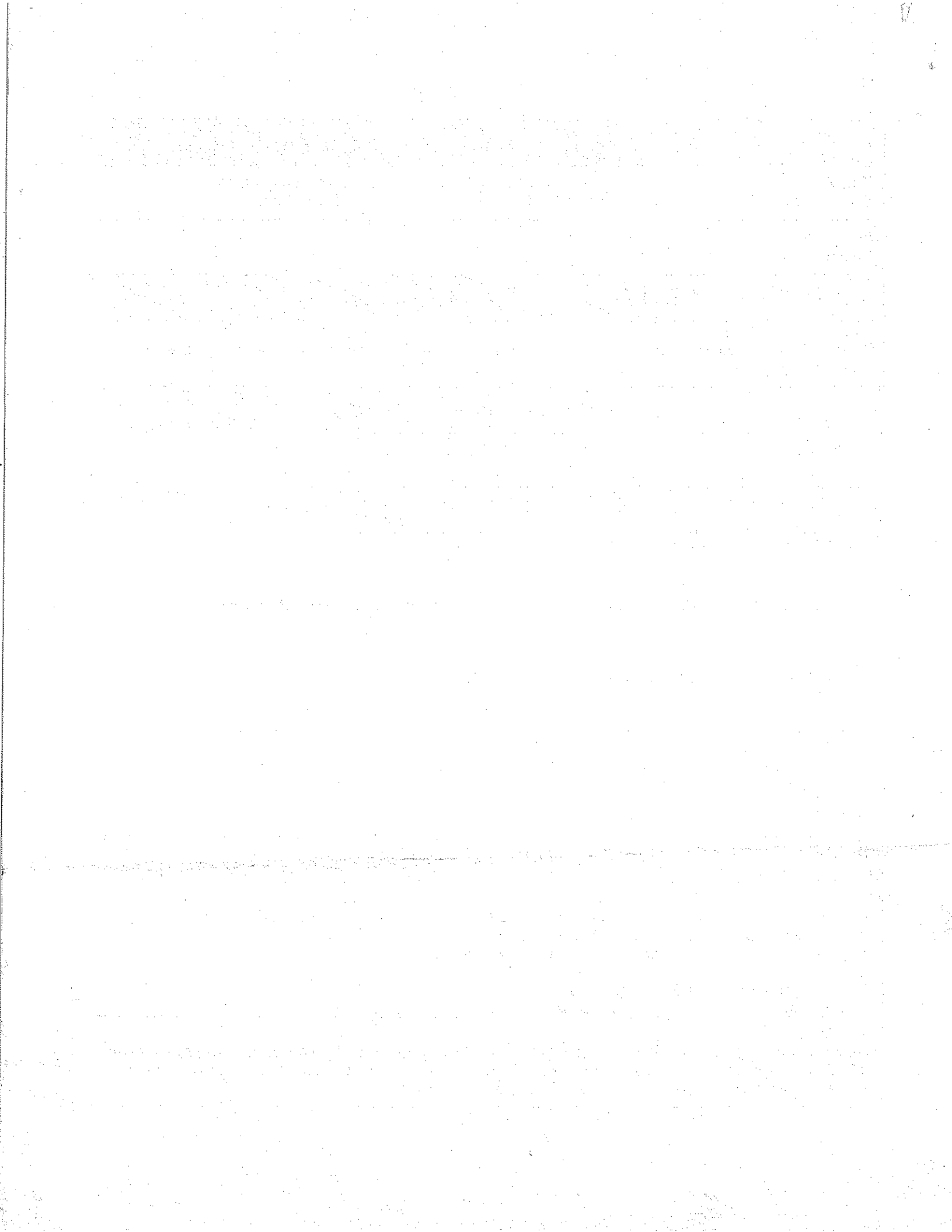
**U.S. Clean Air Act, 1990**  
Propane is not a Class I or Class II ozone depleting chemical as defined in the Clean Air Act of 1990.

**U.S. SARA Title III and CERCLA**  
Not listed.

## SECTION XVI - Other Information

**Reference Sources Used**  
Sax, Irving N. & Lewis Sr., Richard J. *Dangerous Properties of Industrial Materials*, 8th Edition.  
ACGIH, Guide to Occupational Exposure Values, 2000  
US Dept. Health And Human Services National Toxicology Program  
Toxnet.com  
DOT Emergency Response Guidebook, 2000  
NIOSH Pocket Guide to Hazardous Chemicals, Online Version

**Disclaimer**  
The information set forth is based on information which Aux Sable believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Aux Sable assumes no legal responsibility for use or reliance thereon.





## DuPont™ SUVA® 410A Refrigerant

Version 2.2

Revision Date 12.04.2006

Ref. 130000000570

This SDS adheres to the standards and regulatory requirements of the Republic of Ireland and may not meet the regulatory requirements of other countries.

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product information

Product name : DuPont™ SUVA® 410A Refrigerant

Types : ASHRAE Refrigerant number designation: R-410A

Use of the Substance/Preparation : refrigerant

Company : Du Pont de Nemours (Nederland) B.V.  
Baanhoekweg 22  
NL-3313 LA Dordrecht  
The Netherlands

Telephone : +31-78-630.1011

Telefax : +31-78-630.1181

Emergency telephone number : +44-(0)8456-006.640

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	EC-No.	Classification	Concentration [%]
Pentafluoroethane (R125)	354-33-6	206-557-8		50
Difluoromethane (R32)	75-10-5	200-839-4	F+; R12	50

For the full text of the R phrases mentioned in this Section, see Section 16.

### 3. HAZARDS IDENTIFICATION

Rapid evaporation of the liquid may cause frostbite.  
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

### 4. FIRST AID MEASURES

General advice : If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.

Inhalation : Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary.

Skin contact : Wash off with warm water. Take off all contaminated clothing immediately.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

**DuPont™ SUVA® 410A Refrigerant**

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**Notes to physician**

Treatment : Do not give adrenaline or similar drugs.

**5. FIRE-FIGHTING MEASURES**

Specific hazards during fire fighting : pressure build-up

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Should not be released into the environment.

Methods for cleaning up : Evaporates.

**7. HANDLING AND STORAGE****Handling**

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.

Advice on protection against fire and explosion : No special protective measures against fire required.

**Storage**

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Store in original container.

Advice on common storage : No materials to be especially mentioned.

German storage class : 2A : Compressed, liquefied or pressurised gas

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Engineering measures**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

Respiratory protection : For rescue and maintenance work in storage tanks use self-contained breathing





## DuPont™ SUVA® 410A Refrigerant

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apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection	:	heat insulating gloves
Eye protection	:	safety glasses
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	Liquefied gas,
Colour	:	colourless,
Odour	:	ether-like,
pH	:	neutral
Boiling point/range	:	-51,6 °C at 1 013 hPa
Flash point	:	does not flash
Lower explosion limit	:	, not applicable
Vapour pressure	:	16 530 hPa at 25 °C
Vapour pressure	:	30 520 hPa at 50 °C
Density	:	1,062 g/cm <sup>3</sup> at 25 °C, (as liquid)
Density	:	0,0066 g/cm <sup>3</sup> at ca. 26 °C (1 013 hPa)

### 10. STABILITY AND REACTIVITY

Conditions to avoid	:	The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.
Materials to avoid	:	alkali metals, alkaline earth metals, powdered metals, powdered metal salts
Hazardous decomposition products	:	hydrogen halides, carbon dioxide (CO <sub>2</sub> ), Carbon monoxide, fluorocarbons, carbonyl halides

### 11. TOXICOLOGICAL INFORMATION

Acute inhalation toxicity	
• Pentafluoroethane (R125)	: ALC/ 4 h/ rat : > 3 480 mg/l
• Difluoromethane (R32)	: LC50/ 4 h/ rat : 2 158 mg/l

**DuPont™ SUVA® 410A Refrigerant**

Version 2.2

Revision Date 12.04.2006

Ref. 130000000570

Carcinogenicity assessment	:	Did not show carcinogenic effects in animal experiments.
Toxicity to reproduction assessment	:	Did not show mutagenic or teratogenic effects in animal experiments.
Human experience	:	Excessive exposures may affect human health, as follows:  Inhalation severe shortness of breath, narcosis, Irregular cardiac activity
Further information	:	Rapid evaporation of the liquid may cause frostbite.

**12. ECOLOGICAL INFORMATION**

Global warming potential (GWP) : 1 890

**13. DISPOSAL CONSIDERATIONS**

Product	:	Can be used after re-conditioning.
Contaminated packaging	:	Empty pressure vessels should be returned to the supplier.

**14. TRANSPORT INFORMATION****ADR**

Class: 2  
Classification Code: 2A  
HI No.: 20  
UN-No: 1078  
Labelling No.: 2.2  
Proper shipping name: Refrigerant gas, n.o.s. (Pentafluoroethane, Difluoromethane)

**IATA\_C**

Class: 2.2  
UN-No: 1078  
Labelling No.: 2.2  
Proper shipping name: Refrigerant gas, n.o.s. (Pentafluoroethane, Difluoromethane)

**IMDG**

Class: 2.2  
UN-No: 1078  
Labelling No.: 2.2  
Proper shipping name: Refrigerant gas, n.o.s. (Pentafluoroethane, Difluoromethane)

**15. REGULATORY INFORMATION**

Labelling according to EC Directives



**DuPont™ SUVA® 410A Refrigerant**

Version 2.2

Revision Date 12.04.2006

Ref. 130000000570

The product does not need to be labelled in accordance with EC directives or respective national laws.

**National legislation**

Water contaminating class : WGK 1 slightly water endangering  
(Germany) WGK (DE) Update: VwVwS, A4

**16. OTHER INFORMATION**

**Text of R phrases mentioned in Section 2**

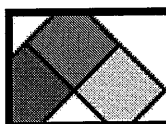
R12 Extremely flammable.

**Further information**

Before use read DuPont's safety information., For further information contact the local DuPont office or DuPont's nominated distributors., ® DuPont's registered trademark

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.





Get the most comprehensive  
MSDS/HazCom program on the market!

Racon - 22

## Material Safety Data Sheet

SECTION I - Material Identity  
SECTION II - Manufacturer's Information  
SECTION III - Physical/Chemical Characteristics  
SECTION IV - Fire and Explosion Hazard Data  
SECTION V - Reactivity Data  
SECTION VI - Health Hazard Data  
SECTION VII - Precautions for Safe Handling and Use  
SECTION VIII - Control Measures  
SECTION IX - Label Data  
SECTION X - Transportation Data  
SECTION XI - Site Specific/Reporting Information  
SECTION XII - Ingredients/Identity Information

### SECTION I - Material Identity

Item Name	
Part Number/Trade Name	RACON-22
National Stock Number	6830009971430
CAGE Code	<u>2A580</u>
Part Number Indicator	A
MSDS Number	14696
HAZ Code	B

### SECTION II - Manufacturer's Information

Manufacturer Name	RACON INCORPORATED
City	WICHITA
State	KS
Country	US
Emergency Phone	316-524-3245

### MSDS Preparer's Information

Date MSDS Prepared/Revised	PRE-HCS
Date of Technical Review	06MAY83
Active Indicator	N

### Alternate Vendors

Vendor #5 CAGE	BGCJZ
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**SECTION III - Physical/Chemical Characteristics**

Specification Number	BB-F-1421
Hazard Storage Compatibility Code	G4-G3
Appearance/Odor	COLORLESS LIQUID-VERY SLIGHT ETHEREAL ODOR TO NONE
Boiling Point	-41.4F
Vapor Pressure	>1
Vapor Density	3.08
Specific Gravity	1.20
Evaporation Rate	N/A
Solubility in Water	SLIGHT
Percent Volatiles by Volume	100
Container Pressure Code	4
Temperature Code	8
Product State Code	U

**SECTION IV - Fire and Explosion Hazard Data**

Flash Point Method	UNK
Lower Explosion Limit	N/A
Upper Explosion Limit	N/A
Extinguishing Media	NON FLAMMABLE= FIGHT FIRE FOR SURROUNDING AREA,
Special Fire Fighting Procedures	FULL PROTECTIVE CLOTHING WITH OBA
Unusual Fire/Explosion Hazards	SHIPPED & STORED AS A LANDFIELD, COMPRESSED GAS UNDER PRESSURE

**SECTION V - Reactivity Data**

Stability	YES
Stability Conditions to Avoid	OPEN FLAMES & HIGH TEMPS
Materials to Avoid	CERTAIN ELASTOMERS, ALKALI OR ALKALINE EARTH METALS, AL, ZN, BE
Hazardous Decomposition Products	HALOGENS, HALOGEN ACIDS & CARBONYL HALIDES
Hazardous Polymerization	NO
Polymerization Conditions to Avoid	N/A
LD50 - LD50 Mixture	N/R

**SECTION VI - Health Hazard Data**

Health Hazards - Acute and Chronic	NONE REPORTED
Carcinogenicity: OSHA	N/R
Symptoms of Overexposure	LIGHT-HEADEDNESS, GIDDINESS, SHORTNESS OF BREATH, POSSIBLE NARCOSIS, POSSIBLE CARDIAC ARRHYTHMIAS @ HI CO
Medical Cond. Aggravated by Exposure	N/R
Emergency/First Aid Procedures	INHALATION: REMOVE TO FRESH AIR, CALL A DR. DO

NOT DIVE EPINEPHRINE OR SIMILAR DRUG

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**SECTION VII - Precautions for Safe Handling and Use**

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Steps if Material Released/Spilled	VENTILATE AREA, REMOVE OPEN FLAMES & EVACUATE PREMISES IN CASE OF LARGE SPILLS
Waste Disposal Method	PERMIT TO EVAPORATE AT A RATE NOT TO EXCEED TLV, ALL IAW STATE, FEDERAL, LOCAL REGULATIONS
Other Precautions	STORE CONTAINERS IN A CLEAN DRY AREA. PROTECT CONTAINERS FROM PHYSICAL DAMAGE. VENTILATED AREA. DO NOT HEAT ABOVE 125F

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**SECTION VIII - Control Measures**

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Respiratory Protection	USE OIL MASKS IN HIGH CONCS
Ventilation	LOCAL EXHAUST FOR LOW CONCS. MECH. ESPECIALLY IN LOW PLACES
Protective Gloves	RUBBER
Eye Protection	SAFETY GOGGLES
Supplemental Health/Safety Data	ITEM IS TYP 22 OF GOVT. SPECIFICATION

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**SECTION IX - Label Data**

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Protect Eye	YES
Protect Skin	YES
Protect Respiratory	YES
Chronic Indicator	UNKNOWN
Contact Code	UNKNOWN
Fire Code	UNKNOWN
Health Code	UNKNOWN
React Code	UNKNOWN

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**SECTION X - Transportation Data**

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Container Quantity	15
Unit of Measure	OZF

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**SECTION XI - Site Specific/Reporting Information**

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**SECTION XII - Ingredients/Identity Information**

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Ingredient #	01
Ingredient Name	MONOCHLORODIFLUOROMETHANE
CAS Number	75456
NIOSH Number	PA6390000
Proprietary	NO

Percent

99

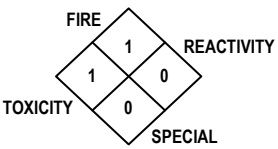
ACGIH TLV

1000PPM

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# Material Safety Data Sheet

H F P A	<b>HAZARD RATINGS</b>	
	4 - EXTREME	
	3 - HIGH	
	2 - MODERATE	
	1 - SLIGHT	
0 - INSIGNIFICANT		

## Section I – General Information

**IDENTITY:** SNAKE OIL

**Manufacturer's Name:** General Pipe Cleaners, Div. of  
General Wire Spring Company

**Manufacturer's Phone Number:** 412-771-6300

**Address:** 1101 Thompson Avenue  
McKees Rocks, PA 15136

**24-hour Emergency Phone Number:** 1-800-535-5053

**Shipping Classification:** Not DOT Regulated

## Section II – Ingredients

Principal Components	CAS#	Threshold Limit Value (units)
Mineral Seal Oil	64741-44-2	400 PPM
Calcium Petroleum Sulfonate	61789-86-4	TLV Not Established
Citropene Perfume (Trade Secret Per CFR 1910.1200 Title 39)		

## Section III – Physical Data

<b>Boiling Point:</b>	450-610°F	<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	.832
<b>Vapor Pressure (mm Hg.):</b>	.1	<b>Melting Point:</b>	Liquid
<b>Vapor Density (AIR = 1):</b>	7.6	<b>Evaporation Rate:</b>	< .4
<b>Solubility in Water:</b>	Emulsifiable		
<b>Appearance &amp; Odor:</b>	Amber liquid with Citrus/Pine odor		

## Section IV – Fire & Explosion Hazard Data

<b>Flash Point (Method Used):</b>	> 212 TCC	<b>Flammable Limits:</b>		<b>LEL:</b>	.7	<b>UEL:</b>	6.0
<b>Extinguishing Media:</b>	Carbon dioxide, chemical foam, dry chemical.						
<b>Special Fire Fighting Procedures:</b>	Full protective clothing including self-contained breathing apparatus.						
<b>Unusual Fire &amp; Explosion Hazards:</b>	Carbon dioxide can be generated. Wet any near-by drums to keep cool.						

**Date of Preparation:** 05-02-08

## Section V – Reactivity Data

Stability:		Unstable	<b>Conditions to Avoid:</b> Heat, sparks, and open flames.
	X	Stable	

**Incompatibility – Material to Avoid:** Acids, alkalies, oxidizing, or reducing materials.

**Hazardous Decomposition or Byproducts:** May liberate carbon monoxide and carbon dioxide.

Hazardous Polymerization:		May Occur	<b>Conditions to Avoid:</b> Heat, sparks, and open flames.
	X	Will Not Occur	

## Section VI – Health Hazard Data

<b>OSHA Regulated:</b> N/A	<b>Carcinogen – NTP Program:</b> N/A	<b>Carcinogen – IARC Program:</b> N/A
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**Health Hazards:** Inhalation – Vapors are irritating to the eyes, nose, and mucous membranes. Eye Contact – Mist will irritate the eyes. Skin Contact – May be irritating after prolonged contact. Swallowed – Causes headaches, nausea, vomiting, and possibly unconsciousness.

**Symptoms of Exposure:** Inhalation – May cause headaches, nausea, vomiting, and dizziness. Eye – Mists will burn the eyes. Skin – May dry the skin. Swallowed – Causes headaches, nausea, vomiting, and possibly unconsciousness.

**Medical Conditions Aggravated by Exposure:** Pre-existing eye or skin disorders may be aggravated by exposure.

**Primary Routes of Entry:** Inhalation, Skin, Ingestion.

**Emergency First Aid:** Inhalation – Remove to fresh air, give artificial respiration if not breathing. Eyes – Flush eyes with plenty of water. Skin – Wash skin with soap and water. Swallowed – Do not induce vomiting. If conscious, drink plenty of water and get medical attention.

## Section VII – Precautions for Safe Handling and Use

**Spill Response:** Wear protective clothing, including boots, apron, gloves, and self-contained breathing apparatus. For small spills – Mop or wipe up and dispose of in a DOT approved waste container. For large spills – Contain by diking with soil or other non-combustible absorbent material and pump into a DOT approved container.

**Waste Disposal Method:** Dispose of contaminated material used in cleaning up spills in a manner approved for this material. Consult appropriate Federal, State, Local regulatory agencies to ascertain proper disposal procedures.

**Precautions for Handling and Storing:** Keep away from heat, sparks, and flames. Store in a cool, dry, well-ventilated place away from incompatible materials. Electrically ground all equipment when handling this product. Keep containers closed when not in use.

**Other Precautions:** Containers, even those emptied, will retain product residue and vapors. Always obey hazard warnings.

**Respiratory Protection (Specify Type):** Wear a NIOSH approved respirator appropriate for these emission levels.

## Section VIII – Control Measures

<b>Ventilation:</b> Local Exhaust	<b>Protective Gloves:</b> Rubber Gloves	<b>Eye Protection:</b> Chemical Goggles
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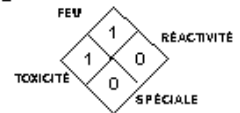
**Other Protective Clothing or Equipment:** Long-sleeved shirt, trousers, rubber boots, rubber gloves, rubber apron. An eyewash and safety shower should be nearby.

**Work/Hygienic Practices:** Wash hands thoroughly.

# Fiche technique santé-sécurité

CLASSES DE RISQUE

4 - EXTRÊME  
3 - HAUT  
2 - MODÉRÉ  
1 - LÉGER  
0 - NON EXISTANT



## Section I – Informations générales

Identité: SNAKE OIL

Nom du Fabricant:	General Pipe Cleaners, Div. of General Wire Spring Co.	Téléphone du fabricant:	(412) 771-6300
Adresse:	1101 Thompson Ave. McKees Rocks, PA, 15136	Téléphone d'urgence 24 h:	1-800-535-5053

Classification de transport: Produit de consommateur (ORM-D)

## Section II – Composition

Composantes	N° CAS	Concentration admissible (unités)
Huile minérale	64741-44-2	400PPM
Sulfonate de pétrole de calcium	61789-86-4	Non établis

Parfum Citropène (secret professionnel selon CFR1910.1200 titre 39)

## Section III – Propriétés physiques

Point d'ébullition:	450 – 610 °F	Poids spécifique: (H <sup>2</sup> O = 1):	.832
Pression de vapeur (mm Hg.)	.1	Limite de fusion:	Liquide
Densité de vapeur: (air = 1)	7.6	Taux d'évaporation:	< .4
Solubilité dans l'eau:	Émulsionnable		
Apparence et odeur:	Liquide jaune avec odeur d'agrumes / pin		

## Section IV – Inflammabilité et explosivité

Point d'éclair (méthode utilisée)	>212 TCC	Limite d'inflammabilité		LEL: .7 UEL: 6.0
Agents d'extinction:	Neige carbonique, poudre sèche, gaz carbonique			
Méthode de lutte contre l'incendie:	Vêtements de protection complets avec respirateur.			
Risques inhabituels de feu & d'explosion:	Peut produire un gaz carbonique. Arroser les contenants proches afin de contrôler la température			

Légende: TCC Centre de Contrôle Technique  
IARC Agence Internationale sur la Recherche sur le Cancer  
NIOSH Institut National pour la Santé-Sécurité au Travail  
LEL et UEL Limite d'explosivité inférieure et supérieure  
NTP Centre de Toxicologie National

Date de préparation: 05-02-08

## Section V – Réactivité

Stabilité:		Instable	<b>Conditions à éviter:</b> Chaleur, étincelles, flammes
	X	Stable	

**Produits à éviter:** Acides, alcalis, matériaux oxydants et diluants

**Sous-produits nocifs de la décomposition:** Peut dégager un gaz carbonique et un monoxyde de carbone.

Polymérisation dangereuse:		peut se produire	<b>Conditions à éviter:</b> Chaleur, étincelles, flammes
	X	ne se produira pas	

## Section VI – Risques pour la santé

<b>Règlement OSHA:</b> N/A	<b>Cancérogène – Programme NPT:</b> N/A	<b>Cancérogène - Programme IARC</b> N/A
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**Risques:** Inhalation – Les vapeurs sont irritantes aux yeux, au nez et aux membranes muqueuses. Contact avec les yeux – La brume irritera les yeux. Contact avec la peau – Des contacts prolongés avec la peau peuvent provoquer une irritation. Ingestion – Cause les maux de tête, la nausée, le vomissement et possiblement l'inconscience.

**Effets d'une surexposition:** Inhalation - Cause les maux de tête, la nausée, le vomissement et l'étourdissement. Les yeux – La brume peut brûler les yeux. La peau: – Peut assécher la peau. Ingestion: - Cause les maux de tête, la nausée, le vomissement et possiblement l'inconscience.

**Condition médicale aggravée par l'exposition:** L'exposition peut aggraver un trouble de peau ou des yeux existant.

**Chemins d'entrées primaires:** Inhalation, la peau, ingestion.

**Mesure d'urgence / Premier soins:** Inhalation: - Déplacer la victime à l'air frais, pratiquer la réanimation cardiorespiratoire au besoin. Les yeux: Rincer abondamment avec de l'eau. La peau: Laver avec de l'eau et du savon. Ingestion: - Ne pas faire vomir. Faire boire beaucoup d'eau et obtenir de l'aide médicale.

## Section VII – Manutention et utilisation

**Réaction au déversement:** Porter des vêtements de protection incluant des bottes, des gants, un tablier et un respirateur. Petit déversement: - Collecter à l'aide d'une vadrouille ou essuyer et disposer dans un contenant approuvée. Gros déversement: - Contenir le déversement par une digue de terre ou autre matériel absorbant non combustible et pomper dans un contenant approuvé.

**Méthode pour éliminer:** Disposer des matériaux contaminés utilisés lors du nettoyage de la façon approuvée pour ce produit. Consulter les agents local, provincial ou fédéral afin d'obtenir les instructions sur le bon procédé pour l'élimination.

**Précaution pour entreposage et manutention:** Garder éloigné de la chaleur, les étincelles et les flammes. Conserver dans un endroit frais, sec et bien ventilé, éloigner des matériaux non compatibles. Installer une prise à la masse lors de la manutention de ce produit. Maintenir les contenant fermés lorsque hors d'usage.

**Autres précautions:** Les contenants, même les vides, dégageront des résidus du produit et des vapeurs. Bien suivre les avertissements.

**Protection respiratoire:** Porter un respirateur approuvé par HIOSH pour ces niveaux d'émissions.

## Section VII – Mesures de contrôle

<b>Ventilation:</b> Évacuation locale	<b>Gants de protection:</b> Gants de caoutchouc	<b>Protection oculaire:</b> Lunette chimique
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**Autres vêtements ou équipements de protection:** Chemise à manche longue, pantalon, bottes de caoutchouc, gants de caoutchouc, tablier de caoutchouc. Il devrait y avoir une douche oculaire et une douche de sécurité.

**Pratiques d'hygiène:** Très bien laver les mains.

# Hoja de Datos de Seguridad de Materiales

## Sección I: Información General

H F P A	CLASIFICACIÓN DE RIESGO	
	4 - EXTREMO	
	3 - ALTO	
	2 - MODERADO	
	1 - BAJO	
0 - INSIGNIFICANTE		

IDENTIDAD: SNAKE OIL

Nombre del productor:	General Pipe Cleaners, Div. de General Wire Spring Company	Número de teléfono del productor:	412-771-6300
Dirección:	1101 Thompson Avenue McKees Rocks, PA 15136	Número de teléfono de emergencia que opera a cualquier hora:	1-800-535-5053

Clasificación de envío: No regulado por DOT (siglas en inglés del Departamento de Transportación de los EE.UU.)

## Sección II: Ingredientes

Componentes principales	Número de CAS	Valor límite umbral (unidades)
Aceite mineral de foca	64741-44-2	400 PPM
Sulfonato de petróleo de calcio	61789-86-4	VLU no establecido

Perfume "Citropene" (Secreto Comercial de acuerdo a CFR 1910.1200 Título 39)

## Sección III: Datos físicos

Punto de ebullición:	450 – 610 °F	Peso específico (H <sub>2</sub> O = 1):	0.832
Presión de vapor (mm Hg.):	0.1	Punto de fusión:	Líquido
Densidad de vapor (AIRE = 1):	7.6	Velocidad de evaporación:	< 0.4
Solubilidad en agua:	Forma emulsiones		

Aspecto y Olor: Líquido color ámbar con olor a Cítrico/Pino

## Sección IV: Datos de riesgos de fuego y explosión

Punto de inflamación (Método usado):	> 212 TCC	Límites de inflamabilidad:		LEI:	0.7	LES:	6.0
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Medios de extinción: Dióxido de carbono, espuma química, química seca.

Procedimientos especiales contra incendios: Traje completo de protección incluido un aparato de respiración autónomo.

Riesgos inusuales de incendio y explosión: Puede crearse dióxido de carbono. Moje todos los bidones cercanos para mantenerlos frescos.

## Sección V: Datos de reactividad

Estabilidad:		Inestable	Condiciones a evitar:	Calor, chispas y llamas abiertas.
	X	Estable		

Incompatibilidad – Materiales a evitar: Ácidos, álkalis, materiales oxidantes o reductores.

Descomposición o subproductos riesgosos: Puede desprender monóxido o dióxido de carbono.

Polimerización riesgosa		Puede ocurrir	Condiciones a evitar:	Calor, chispas y llamas abiertas.
	X	No ocurrirá		

## Sección VI: Datos de riesgos a la salud

Regulado por OSHA: NC* * No corresponde	Carcinógeno – Programa NTP: NC	Carcinógeno – Programa IARC: NC
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**Riesgos para la salud:** Inhalación: Los vapores irritan los ojos, la nariz y las membranas mucosas. Contacto con los ojos: La neblina irritará los ojos. Contacto con la piel: Puede causar irritación después de contacto prolongado. Ingestión: Da lugar a dolores de cabeza, náusea, vómitos y la posible pérdida del conocimiento.

**Síntomas de exposición:** Inhalación: Puede causar dolores de cabeza, náusea, vómitos y mareos. Ojos: Las neblinas quemarán los ojos. Piel: Podrá secar la piel. Ingestión: Da lugar a dolores de cabeza, náusea, vómitos y la posible pérdida del conocimiento.

**Condiciones médicas que se agravan durante la exposición:** Enfermedades preexistentes de los ojos o la piel pueden empeorar debido a la exposición.

**Vías primarias de entrada:** Inhalación, la piel, ingestión.

**Primeros auxilios de emergencia:** Inhalación: Sacar al aire libre. Si no respira, dar respiración artificial. Ojos: Enjuagar los ojos con mucha agua. Piel: Lavar la piel con agua y jabón. Ingestión: No induzca el vómito. Si está consciente, tome bastante agua y obtenga atención médica.

## Sección VII: Precauciones para el manejo y uso seguros

**Respuesta a derrames:** Póngase ropa protectora, que incluya botas, delantal y guantes, y un aparato de respiración autónomo. Para derrames pequeños: Seque con trapeador o paño y deshágase del material derramado en un contenedor para desechos aprobado por el DOT. Para derrames grandes: Detenga el derrame con un dique de tierra u otro material absorbente que no sea combustible y bombéelo hacia un contenedor aprobado por el DOT.

**Método para deshacerse de los residuos:** Deshágase de los materiales contaminados que se usaron para limpiar los derrames en una manera aprobada para este material. Consulte con las agencias reguladoras apropiadas federales, del estado y locales para determinar los procedimientos adecuados para deshacerse de los materiales.

**Precauciones para la manipulación y almacenamiento:** Aléjelo del calor, chispas y llamas. Almacénelo en un lugar fresco, seco y bien ventilado, alejado de materiales incompatibles. Ponga a tierra todo el equipamiento cuando manipule este producto. Mantenga los contenedores cerrados cuando no estén usándose.

**Otras precauciones:** Los recipientes, incluso los que están vacíos, tendrán residuos y vapores del producto. Siempre respete los avisos de peligro.

**Protección respiratoria (especifique el Tipo):** Póngase una máscara aprobada por NIOSH (siglas en inglés del Instituto Nacional para la Seguridad y la Salud Ocupacionales) para estos niveles de emisión.

## Sección VIII: Medidas de control

<b>Ventilación:</b> Extracción local	<b>Guantes de protección:</b> Guantes de goma	<b>Protección de los ojos:</b> Lentes de protección contra productos químicos
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**Otra ropa o equipos de protección:** Camisa de mangas largas, pantalones, botas de goma, guantes de goma, delantal de goma. Una estación para enjuagarse los ojos y una ducha de seguridad deberán estar cercas.

**Prácticas laborales/higiénicas:** Lávese las manos meticulosamente.



**Common Name:** BATTERY FLUID, ACID

**Manufacturer:** GLETRONICS

**MSDS Revision Date:** 7/1/2005

**Grainger Item Number(s):** 5WG11

**Manufacturer Model Number(s):** N002209, Z-Pack

GLETRONICS, INC.  
1150 WILLIS AVE.  
WHEELING, IL 60090

TEL: (847) 520-6120

FAX: (847) 520-9750

EMERGENCY TELEPHONE:  
CHEMTREC: (800) 424-9300

MATERIAL SAFETY DATA SHEET

BATTERY FLUID, ACID

THIS MATERIAL SAFETY DATA INFORMATION SHEET IS PRINCIPALLY DIRECTED TO MANAGERIAL, SAFETY, HYGIENE AND MEDICAL PERSONNEL. THE DESCRIPTION OF PHYSICAL CHEMICAL AND TOXICOLOGICAL PROPERTIES AND HANDLING ADVICE IS BASED ON EXPERIMENTAL RESULTS AND PAST EXPERIENCE. IT IS INTENDED AS A STARTING POINT FOR THE DEVELOPMENT OF HEALTH AND SAFETY PROCEDURES.

## DOT LABELING REQUIREMENTS

CHEMICAL NAME: BATTERY FLUID, ACID; ELECTROLYTE BATTERY ACID

CLASS: 8

UN NO.: UN2796

WHMIS CLASSIFICATION: CLASS E, CORROSIVE, D1A

PACKAGING GROUP: II

## HAZARDOUS INGREDIENTS/IDENTITY

HAZARDOUS INGREDIENTS	CAS NUMBER	WEIGHT %	OSHA PEL	ACGIH TLV
SULFURIC ACID - 66 DEG. BAUME (MINERAL ACID, OIL OF VITRIOL, H <sub>2</sub> SO <sub>4</sub> , SULFURIC ACID)	7664-93-9	31-39	1 MG/M3	1 MG/M3
WATER 40 CFR PART 372.45	7732-18-5	61-69		

### NOTIFICATION:

BATTERY FLUID, ACID CONTAINS BETWEEN 31 AND 39% BY WEIGHT OF H<sub>2</sub>SO<sub>4</sub> (CAS NO. 7664-93-9) AND IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND RE-AUTHORIZATION ACT OF 1986. IT IS ALSO SUBJECT TO THE REPORTING REQUIREMENTS OF 40 CFR PART 372.

## TOXICOLOGY DATA

### ACUTE:

ORAL LD<sub>50</sub>: 2,140 MG/KG IN RATIO

SKIN AND EYE IRRITATION (RABBIT): CORROSIVE

INHALATION 1 HOUR LC<sub>50</sub> RAT: 347 PPM

## PHYSICAL & CHEMICAL CHARACTERISTICS

FORMULA: H<sub>2</sub>SO<sub>4</sub>

FORMULA WEIGHT: 98.08

PHYSICAL STATE/DESCRIPTION: CLEAR, TO YELLOWISH LIQUID

BOILING POINT: 32 - 38% = ABOVE 235 DEGREES F

FLASH POINT: NOT APPLICABLE

FREEZING POINT: 32 - 38% = LESS THAN -49 DEGREES F



ODOR: ACRID SHARP UNPLEASANT ODOR

pH: LESS THAN 1 (1% AQUEOUS SOLUTION)

SPECIFIC GRAVITY: 32 - 38% = 1.240 TO 1.280 (WATER = 1)

VAPOR DENSITY: 3.4 (AIR = 1 AT BOILING POINT OF SULFURIC ACID)

VAPOR PRESSURE: 32 - 38% = LESS THAN 1 MMHg AT 100 DEG. F (37.8 DEG. C)

WATER SOLUBILITY: SOLUBLE IN ALL PROPORTIONS

REPORTABLE QUANTITY: 1,000 LB./454 KG. AS H<sub>2</sub>SO<sub>4</sub>

HMIS RATINGS:

HEALTH	3
FLAMMABILITY	0
REACTIVITY	2
PERSONAL PROTECTION	D

HAZARD INDEX:

0 = INSIGNIFICANT  
1 = SLIGHT  
2 = MODERATE  
3 = HIGH  
4 = EXTREME

## **FIRE & EXPLOSION DATA**

FLASH POINT: WILL NOT BURN, NON-FLAMMABLE

AUTO-IGNITION TEMPERATURE: N/A, NOT COMBUSTIBLE

EXTINGUISHER MEDIA:

DRY CHEMICAL OR CO<sub>2</sub> SMALL FIRES. USE MEDIA APPROPRIATE FOR SURROUNDING MATERIAL. USE WATER SPRAY TO COOL CONTAINERS EXPOSED TO FIRE; DO NOT GET WATER INSIDE CONTAINERS.

SPECIAL FIRE FIGHTING PROCEDURES:

DO NOT DIRECT WATER INTO ACID TANKS. COOL OUTSIDE OF TANK WITH WATER. WEAR FULL-FACE, SELF-CONTAINED RESPIRATOR, RUBBERIZED OUTERWEAR, GLOVES, BOOTS.

UNUSUAL FIRE AND EXPLOSIVE HAZARDS:

SULFURIC ACID WILL NOT BURN, BUT CAN START FIRES WITH ORGANIC MATERIAL, NITRATES, CARBIDES, CHLORATES AND METAL POWDERS. FLAMMABLE HYDROGEN GAS CAN FORM WHEN ACID CONTACTS MOST METALS. HYDROGEN MAY ACCUMULATE IN CONTAINERS, AVOID IGNITION SOURCES, SPILL OVER INTO SEWERS MAY GENERATE HYDROGEN GAS OR TOXIC SULFIDES. ADDITION OF WATER TO ACID CAUSES HEAT AND POSSIBLE SPLATTERING.

## **PHYSICAL HAZARDS (REACTIVITY DATA)**

STABILITY: STABLE

CONDITIONS TO AVOID: CONTACT WITH METALS, ORGANICS.

INCOMPATIBILITY: (MATERIALS TO AVOID)  
STRONG CORROSIVE AGENT WILL ATTACK MOST METALS. CONTACT WITH ORGANICS,  
NITRATES, CARBIDES, CHLORATES, ETC. MAY CAUSE IGNITION. ALLYL COMPOUNDS AND  
ALDEHYDES UNDERGO POLYMERIZATION-POSSIBLY VIOLENT.

HAZARDOUS DECOMPOSITION PRODUCTS:  
SULFUR OXIDES AT HIGH TEMPERATURE. REACTS WITH ABOVE TO FORM HYDROGEN  
CYANIDE AND HYDROGEN SULFIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: ALL CONTACT WITH ORGANIC SUBSTANCES AND MOST METALS.

## HEALTH HAZARDS

ACUTE:

3RD DEGREE BURNS. SEVERE RESPIRATORY, SKIN AND EYE IRRITANT.  
BRONCHITIS LARYNGEAL AND PULMONARY EDEMA MAY RESULT.

SIGNS AND SYMPTOMS OF EXPOSURE:

PRICKLING OR BURNING SENSATION OF SKIN AND MUCOUS MEMBRANES.  
COUGHING, SNEEZING, TIGHTNESS OF CHEST, DIFFICULTY BREATHING.

CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN:

I.A.R.C. MONOGRAPHS:

A LIMITED STUDY OF REFINERY WORKERS SUGGESTED A POSSIBLE LINK BETWEEN  
SULFURIC ACID EXPOSURE AND LARYNGEAL CANCER. HOWEVER, DUE TO THE SMALL  
NUMBER OF WORKERS INVOLVED AND THE MIXED EXPOSURE TO SEVERAL OTHER  
MATERIALS INCLUDING DIETHYLSULFATE (AN I.A.R.C. AND NTP CARCINOGEN), THERE  
IS NO CAUSE-AND-EFFECT RELATIONSHIP THAT CAN BE INFERRED FROM THE DATA  
AVAILABLE.

THEME STUDIES HAVE BEEN CONDUCTED FOR VARIOUS INDUSTRIES, BUT NO STUDIES OF  
BATTERY ACID MANUFACTURING FACILITIES HAVE BEEN INCLUDED. THE OVERALL  
WEIGHT OF EVIDENCE FROM ANIMAL TOXICITY AND HUMAN EPIDEMIOLOGICAL STUDIES  
SHOW NO RELATIONSHIP BETWEEN CANCER AND SULFURIC ACID EXPOSURE.

NATIONAL TOXICOLOGY:

PROGRAM: NO  
OSHA: NO  
CAL/OSHA: NO  
PROP 65: NO

EMERGENCY & FIRST AID PROCEDURES: SPEED IN REMOVING ACID IS ESSENTIAL.

TREAT MOST URGENT SYMPTOMS FIRST:

CESSATION OF BREATHING, EYE INJURY, SKIN CONTACT, SHOCK. SEEK MEDICAL  
ASSISTANCE EVEN IF INJURY APPEARS SLIGHT. GIVE PHYSICIAN DETAILED ACCOUNT  
OF INCIDENT.

## RECOMMENDATIONS TO PHYSICIAN

WHILE THE PATIENT IS BEING TRANSPORTED TO A MEDICAL FACILITY, APPLY

COMPRESSES OF ICED WATER. IF MEDICAL TREATMENT MUST BE DELAYED, IMMERSE THE AFFECTED AREA IN ICED WATER. IF IMMERSION IS NOT PRACTICAL, COMPRESSES OF ICED WATER CAN BE APPLIED. AVOID FREEZING TISSUES.

NOTE TO PHYSICIAN:

CONTINUED WASHING OF THE AFFECTED AREA WITH COLD OR ICED WATER WILL BE HELPFUL IN REMOVING THE LAST TRACES OF SULFURIC ACID. CREAMS OR OINTMENTS SHOULD NOT BE APPLIED BEFORE OR DURING THE WASHING PHASE OF THE TREATMENT.

## **ROUTES OF ENTRY**

INHALATION: REMOVE FROM EXPOSURE. CPR, IF INDICATED. GIVE OXYGEN.

EYES:

FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS OPEN DURING FLUSHING.

SKIN:

FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER. REMOVE CONTAMINATED CLOTHING AND SHOES (THIS CAN BE DONE WHILE UNDER SHOWER).

INGESTION:

DO NOT INDUCE VOMITING. GIVE LARGE AMOUNTS OF MILK, MILK OF MAGNESIA OR TABLE OIL OR FRESH EGGS. USE WATER WHEN NOTHING ELSE IS AVAILABLE. RINSE MOUTH OFTEN.

CONDITIONS AGGRAVATED BY:

INDIVIDUALS WITH PRE-EXISTING DISEASE OF THE LUNGS MAY HAVE INCREASED SUSCEPTIBILITY TO THE TOXICITY OF EXCESSIVE EXPOSURE.

## **SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES**

PRECAUTIONS TO BE TAKEN IN HANDLING & STORAGE:

SEE "UNUSUAL FIRE AND EXPLOSION HAZARDS". DO NOT STORE NEAR ORGANICS. HYDROGEN MAY BE GENERATED INSIDE DRUMS AND TANKS; AVOID FLAMES AND SPARKS.

OTHER PRECAUTIONS:

NEVER ADD WATER TO CONTAINERS OF ACID. FOR SPILLS, BEWARE OF ACID REACTION IN SEWERS THAT MAY PRODUCE FLAMMABLE HYDROGEN GAS OR TOXIC SULFIDES.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

WEAR FULL ACID-PROTECTIVE GEAR. REMOVE SOURCES OF IGNITION. NEUTRALIZE SPILL WITH LIME OR SODA ASH, FLUSH TO ON-SITE WASTEWATER TREATMENT SYSTEM. DIKE LARGE SPILLS. DO NOT WASH INTO STORM OR SANITARY SEWER SYSTEM. EPA AND SUPERFUND REPORTABLE DISCHARGE IS 1000 LBS. SOAK UP SMALL SPILLS WITH DRY SAND, CLAY OR DIATOMACEOUS EARTH.

WASTE DISPOSAL METHODS (CONSULT FEDERAL, STATE AND LOCAL REGULATIONS):

FLUSH AS ABOVE. NEUTRALIZE WITH LIME OR SODA ASH, (A MINIMUM OF 5.2 POUNDS SODA ASH PER GALLON OF BATTERY FLUID, ELECTROLYTE). CONSULT REGULATIONS.

EPA HAZARDOUS WASTE D002 - CORROSIVE AND D003 - REACTIVE IF DISCARDED WITHOUT PRIOR NEUTRALIZATION.

## **SPECIAL PROTECTION INFORMATION/CONTROL MEASURES**

### RESPIRATORY PROTECTION:

WHEN NEEDED USE NIOSH OR MSHA APPROVED HALF OR FULL-FACE MASK WITH ACID GAS CARTRIDGE. FOR HIGH CONCENTRATIONS, USE SELF-CONTAINED BREATHING UNIT.

### VENTILATION: REQUIRED

LOCAL EXHAUST: YES

MECHANICAL: VENTILATE STORAGE TANKS BEFORE ENTRY.

### PROTECTIVE GLOVES: RUBBER

### EYE PROTECTION: CHEMICAL GOGGLES OR FULL-FACE SHIELD

### OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

RUBBER SAFETY SHOES/BOOTS. RUBBER APRON OR FULL SUIT IF SPLASHES ARE LIKELY.

### WORK/HYGIENIC PRACTICES:

PROHIBIT SMOKING. PROVIDE SAFETY SHOWERS/EYE WASHES NEAR WORK SITE. TRAIN EMPLOYEES IN CHEMICAL HANDLING PRACTICES.

### MAINTENANCE OF CONTAMINATED EQUIPMENT:

USE SAME PRECAUTIONS AS IN "SPECIAL PRECAUTIONS" ABOVE.

LABELING PRIORITY: BATTERY FLUID, ACID, 8, UN2796, PG. II

JULY, 2005

1806009

# OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

**Section 1**

**MATERIAL SAFETY DATA SHEET # 2**  
**Swif® 95**



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07055  
 Phone (800) 221-9330  
 Fax (800) 333-3456

Date Prepared: 3/3/1994 Last Reviewed: 10/5/2005

Meets OSHA 29 CFR 1910.1200

**Section 2 - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
Tin (7440-31-5)	2.0mg/M <sup>3</sup>	2.0mg/M <sup>3</sup>	N/A	--
Zinc Chloride (7646-85-7)	1.0mg/M <sup>3</sup>	1.0mg/M <sup>3</sup> (fumes)	N/A	8%
Antimony (7440-36-0)	0.5 mg/M <sup>3</sup>	0.5 mg/M <sup>3</sup>	N/A	5%
Ammonium Chloride (12125-02-9)	N/A	10.0mg/M <sup>3</sup> (fumes)	N/A	--

**HMIS Hazard Rating:** Health: 2 Flammability: 0 Reactivity: 1 Personal Protection: C

**Section 3 - Physical/Chemical Characteristics**

<b>Boiling Point (°C):</b> Tin 2260° C Antimony 1635° C	<b>Specific Gravity (H2O = 1):</b> 4.03	<b>Vapor Density (Air = 1):</b> N/A	<b>Vapor Pressure (mm Hg):</b> N/A
<b>Melting Point (° F)</b> 464	<b>Evaporation Rate: (Butyl Acetate = 1)</b>	<b>Solubility in Water:</b> Slightly miscible with water	
<b>Appearance And Color:</b> Gray, silvery paste.	<b>Odor:</b> None		

**Section 4 - Fire And Explosion Hazard Data**

<b>Flash Point:</b> N/A	<b>Flammable Limits:</b> N/A	<b>LEL:</b>	<b>UEL:</b>
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**Extinguishing Media:** Carbon dioxide, dry chemical or fog (water).

**Special Firefighting Procedures:**  
None

**Unusual Fire And Explosion Hazards:**  
With excessive heating material could emit toxic fumes.

Continued on Next Page

**Section 5 - Reactivity Data**

**Stability:** Stable      **Conditions To Avoid:** Avoid contact with concentrated alkalis.

**Incompatibility (Materials To Avoid):** Zinc chloride is incompatible with cyanides (may release toxic HCN gas) & sulfide salts (may release toxic H<sub>2</sub>S gas).

**Hazardous Decomposition:** Will not occur except at high temperatures.

**Hazardous Polymerization:** Will not occur except at high temperatures

**Section 6 - Health Hazard Data**

**Routes of Entry:**    **Inhalation** yes/secondary      **Skin** yes/primary      **Ingestion** yes/primary

**Health Hazards:**

Chronic antimony poisoning causes skin pustules, bleeding gums, conjunctivitis, laryngitis, headache, weight loss, and anemia. Acute poisoning can cause nausea, vomiting and severe diarrhea with mucous, and blood, hemorrhagic nephritis & hepatitis may also occur.

**Carcinogenicity:**    **NTP** NO      **IARC** NO      **OSHA Regulated** NO

**Signs And Symptoms of Exposure:**

**INGESTION:** Severe damage to internal organs (esophagus & pylorus) will occur if swallowed in large quantities. Antimony is strongly irritating to mucous membranes and to tissue. **INHALATION:** Dust from "dried down" product can cause injury to respiratory tract. Severe exposure can cause lung damage. **SKIN CONTACT:** Prolonged contact causes burns, skin irritation with discomfort with rash. **EYE CONTACT:** Will cause eye irritation with discomfort, tearing or blurring of vision.

**Medical Conditions Generally Aggravated By Exposure:**

Advanced stages of antimony poisoning may cause fatty degeneration of the liver and other organs. The gastrointestinal tract shows marked congestion and edema.

**Emergency And First Aid Procedures:**

**INGESTION:** Do not induce vomiting. If conscious, dilute by giving large quantities of water or milk. Call a physician immediately. **INHALATION:** If excess dust from dried product is inhaled remove to fresh air, if not breathing, give artificial respiration preferably mouth to mouth. If breathing is difficult give oxygen. Call a physician. **SKIN CONTACT:** Wash affected skin area with soapy water. Remove contaminated clothing. If burn or rash appears consult a physician. **EYE CONTACT:** Immediately flush eyes with plenty of water for 15 minutes. Consult a physician.

*Continued on Next Page*

**Section 7 - Precautions For Safe Handling And Use:****Steps To Be Taken In Case Material Is Released Or Spilled:**

Flush with large quantities of water & pick up with absorbing materials.

**Waste Disposal Method:**

Landfill, to dispose of large quantities, comply with federal, state and local regulations.

**Precautions To Be Taken In Handling And Storing:**

If handling in large quantities, rubber gloves and face shield recommended.

**Other Precautions:**

None

**Section 8 - Control Measures:****Respiratory Protection:**

In confined spaces or other circumstances where adequate ventilation cannot be assured use NIOSH-approved respirator, positive pressure airline mask, or self contained breathing apparatus.

Ventilation: Local Exhaust N/A

Special N/A

Mechanical Exhaust fan

Gloves: Rubber gloves

Other: N/A

Eye Protection: Safety goggles

Other Protective Clothing: Gloves while handling the material.

Work/Hygienic Practices Wash thoroughly after handling.



**F**ACTS  
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AST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.





**MATERIAL SAFETY DATA SHEET**

**SECTION 1 PRODUCT AND COMPANY IDENTIFICATION**

Trade Name: OATEY BLACK ABS CEMENT  
Product No.: 30889, 30892, 30902, 30915, 30999, 32204, 32205, 32206, 32207  
Product Use: Cement for ABS Pipe  
Formula: ABS Resin in Solvent Solution  
Synonyms: ABS Plastic Pipe Cement  
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>  
Oatey Phone Number: (216) 267-7100 or (800) 321-9532  
Emergency Phone Numbers: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.  
Prepared By: Technical Department  
Preparation Date: November 11, 2008

**SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS**

<u>INGREDIENTS:</u>	<u>%wt/wt:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Methyl Ethyl Ketone	40 - 60%	78-93-3	200 ppm 300 ppm STEL	200 ppm	None
ABS Resin (Non-hazardous)	25 - 40%	9003-56-9	None Established	None Established	None
Acetone	10 - 20%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	None

OSHA Hazard Classification: Flammable, irritant, organ effects

**SECTION 3 HAZARDS IDENTIFICATION**

Emergency Overview:  
Black liquid with a sharp, penetrating odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting or diarrhea. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

**SECTION 4 FIRST AID MEASURES**

CALL 1-877-740-5015 or 1-303-623-5716 COLLECT  
Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.  
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with water for 15 minutes. If irritation persists, seek medical attention.  
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.  
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

**SECTION 5 FIRE FIGHTING MEASURES**

Flashpoint / Method: 14 - 23 Degrees F. (-10 to -5 Degrees C) / CCCFP  
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume  
Extinguishing: Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.  
Media:

Special Fire Fighting Procedure: Unusual Fire and Explosion Hazards: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored

Hazardous Decomposition Products: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 12 for disposal information.

**SECTION 7 HANDLING AND STORAGE**

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.

Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.

Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Eye Protection: Safety glasses with side shields or safety goggles.

Other: Eye wash and safety shower should be available.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point: 176 Degrees F / 80 C  
Melting Point: Not applicable  
Vapor Pressure: 100 mmHg @ 25 Degrees C  
Vapor Density: (Air = 1) 2.5

Volatile Components: 60-70%  
Solubility In Water: Negligible  
pH: Not applicable  
Specific Gravity: 0.88 +/- 0.02  
Evaporation Rate: (BUAC = 1) = 2.7  
Appearance: Black Liquid  
Odor: Sharp, penetrating odor  
Will Dissolve In: Methyl ethyl ketone  
Material Is: Liquid

**SECTION 10 STABILITY AND REACTIVITY**

Stability: Stable.  
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.  
Hazardous Combustion will produce toxic and irritating vapors  
Decomposition including carbon monoxide, carbon dioxide and hydrogen  
Products: chloride.  
Incompatibility/ Oxidizing agents, alkalis, amines, ammonia, acids, chlorine  
Materials To Avoid: compounds, chlorinated inorganics (potassium, calcium and  
sodium hypochlorite) and hydrogen peroxides. May attack  
plastic, resins and rubber.  
Hazardous Will not occur.  
Polymerization:

**SECTION 11 TOXICOLOGICAL INFORMATION**

Inhalation: Vapors or mists may cause mucous membrane and respiratory  
irritation, coughing, headache, dizziness, dullness, nausea,  
shortness of breath and vomiting. High concentrations may cause  
central nervous system depression, narcosis and unconsciousness.  
May cause lung damage.  
Skin: May cause irritation with redness, itching and pain. Methyl  
ethyl ketone may be absorbed through the skin causing effects  
similar to those listed under inhalation.  
Eye: Vapors may cause irritation. Direct contact may cause irritation  
with redness, stinging and tearing of the eyes. May cause eye  
damage.  
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and  
diarrhea. Aspiration during swallowing or vomiting can cause  
chemical pneumonia and lung damage.  
Chronic Prolonged or repeated overexposure cause dermatitis and damage  
Toxicity: to the lungs and central nervous system.  
Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg  
Inhalation rat LC50: 50,100 mg/m<sup>3</sup>/8 hours  
Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg  
Inhalation rat LC50: 23,500 mg/m<sup>3</sup>/8 hours  
Skin rabbit LD50: 6,480 mg/kg  
Sensitization: None of the components are known to cause sensitization.  
Carcinogenicity: None of the components are listed as a carcinogen or suspect  
carcinogen by NTP, IARC or OSHA.  
Mutagenicity: Methyl ethyl ketone and acetone are generally thought not to  
be mutagenic.  
Reproductive Methyl ethyl ketone has been shown to cause embryofetal  
Toxicity: toxicity and birth defects in laboratory animals. Acetone  
has been found to cause adverse developmental effects only  
when exposure levels cause other toxic effects to the mother.  
Medical Persons with pre-existing skin or lung disorders  
Conditions may be at increased risk from exposure to this product.  
Aggravated By  
Exposure:

**SECTION 12 ECOLOGICAL INFORMATION**

This product is not expected to be toxic to aquatic organisms.  
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.  
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use.  
Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 450 g/L per SCAQMD Test Method 316A

**SECTION 13 DISPOSAL CONSIDERATIONS**

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U159

EPA Hazardous Waste ID Number: D001, D035, F003, F005

EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

**SECTION 14 TRANSPORT INFORMATION**

DOT Less than 1 Liter (0.3 gal) Greater than 1 Liter (0.3 gal)

UN/NA Number:	None	UN1133
Proper Shipping Name:	Consumer Commodity	Adhesives
Hazard Class:	ORM-D	3
Packing Group:	None	PGII
Hazard Labels:	None	Flammable Liquid

IMDG

UN Number:	UN1133	UN1133
Proper Shipping Name:	Adhesives	Adhesives
Hazard Class:	3	3
Packing Group:	II	II
Label:	None (Limited Quantities are excepted from labeling)	Class 3 (Flammable Liquid)

Flashpoint (deg C) -10 to -5 Degrees C -10 to -5 Degrees C  
2008 North American Emergency Response Guidebook Number: 127

**SECTION 15 REGULATORY INFORMATION**

Hazard Category for Section 311/312: Acute Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product does not contain chemicals subject to SARA Title III Section 313 Reporting requirements.

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Methyl Ethyl Ketone (60% maximum) of 5,000 lbs, is 8,333 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A.  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**SECTION 16                    OTHER INFORMATION**

NFPA and HMIS

NFPA Hazard Signal: Health: 1    Flammability: 3    Reactivity: 0    Special: None  
HMIS Hazard Signal: Health: 2    Flammability: 3    Reactivity: 0    PPE: G

**DISCLAIMER**

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.  
assumes any liability for its use.



# OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

**Section 1**

**MATERIAL SAFETY DATA SHEET # 37**  
**Flip Stick®**



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07055  
 Phone (800) 221-9330  
 Fax (800) 333-3456

Date Prepared: 1/31/1990 Last Reviewed: 12/4/2002

Meets OSHA 29 CFR 1910.1200

**Section 2 - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
Cupric Chloride (1344-67-8)	N/A	1mg/M <sup>3</sup> (dust)	1mg/M <sup>3</sup>	10%

**HMIS Hazard Rating:** Health: 2 Flammability: 0 Reactivity: 0 Personal Protection: E

**Section 3 - Physical/Chemical Characteristics**

Boiling Point (°C):	Specific Gravity (H <sub>2</sub> O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	0.95 to 1.0	N/A	N/A
Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	
N/A		Partially	
Appearance And Color:	Bluish green crystalline powder	Odor:	No odor

**Section 4 - Fire And Explosion Hazard Data**

Flash Point:	Flammable Limits:	LEL:	UEL:
N/A	N/A		

**Extinguishing Media:** Water, fog, dry chemical, carbon dioxide.

**Special Firefighting Procedures:**

This product has combustible materials and supplies its own oxygen for sustaining the combustion.

**Unusual Fire And Explosion Hazards:**

None

Continued on Next Page

**Section 5 - Reactivity Data**

Stability: Stable                      Conditions To Avoid: None

Incompatibility                      N/A  
(Materials To Avoid):

Hazardous Decomposition: None

Hazardous Polymerization: Will Not Occur

**Section 6 - Health Hazard Data**

Routes of Entry:    Inhalation YES/Primary                      Skin YES/Primary                      Ingestion YES/Secondary

**Health Hazards:**

Inhalation of heavy dust may irritate nose and throat. Ingestion can cause injury to mouth.

Carcinogenicity:    NTP NO                      IARC NO                      OSHA Regulated NO

**Signs And Symptoms of Exposure:**

Irritation of nose and throat. Irritation of eyes and possible conjunctivitis.

**Medical Conditions Generally Aggravated By Exposure:**

None

**Emergency And First Aid Procedures:**

EYES: Immediately flush with large amounts of water for at least 15 minutes. If irritation persists, obtain medical attention. SKIN: Wash with soap and water. If irritation persist, obtain medical attention. INHALATION: Remove from exposure. If breathing is difficult or discomfort persists, obtain medical attention. INGESTION: Rinse mouth with water. Give water to dissolve particles. Obtain medical attention.

*Continued on Next Page*



**Section 7 - Precautions For Safe Handling And Use:****Steps To Be Taken In Case Material Is Released Or Spilled:**

Sweep up the spilled material making sure no dust is created. Avoid flushing to sewer or stream.

**Waste Disposal Method:**

Non-hazardous landfill

**Precautions To Be Taken In Handling And Storing:**

Store in cool dry place.

**Other Precautions:**

None

**Section 8 - Control Measures:****Respiratory Protection:**

Use NIOSH/MSHA approved respiratory protection if airborne dust is expected

Ventilation: Local Exhaust Adequate Special N/A  
Mechanical N/A

Gloves: None normally required.

Other: N/A

Eye Protection: Safety glasses if possibility of eye contact with

Other Protective Clothing: None normally required

Work/Hygienic Practices Use good personal hygiene practices. Wash thoroughly after handling.



**F**ACTS  
axed  
AST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.





# MATERIAL SAFETY DATA SHEETS (MSDS) On-Line OSHA-Required Health And Safety Information!

## Section 1

### MATERIAL SAFETY DATA SHEET # 105 Hercules Furnace/Stove Cement

Date Prepared: 14-Feb-01

Last Reviewed: 03-May-01

Hercules Chemical Co, Inc.  
111 South Street  
Passaic, NJ 07055-7398  
Tel (800) 221-9330  
Fax (800) 333-3456  
E-Mail [info@herchem.com](mailto:info@herchem.com)

Meets OSHA 29 CFR 1910.1200

## Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity;  
Common Name(s), CAS Numbers)

Sodium silicate (1344-09-8)

OSHA PEL	ACGIH TLV	Other Limits
N/E	N/E	N/A

% Upper Bound Limits if SARA Reportable
--

**HMIS Hazard Rating:** Health: 2 Flammability: 0 Reactivity: 0 Personal Protection: A

## Section 3 - Physical/Chemical Characteristics

Boiling Point (°F):	Specific Gravity (H <sub>2</sub> O=1):	Vapor Density (Air=1):	Vapor Pressure (mm Hg):
N/A	1.95 +/- .03	N/A	N/A
Melting Point (°F):	Evaporation Rate (Butyl Acetate=1):	Solubility in Water:	
N/A	N/A	Slightly soluble in water and water miscible	
Appearance And Color: Tan colored paste		Odor: No odor	

## Section 4 - Fire And Explosion Hazard Data

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<b>Flash Point:</b> N/A	<b>Flammable Limits:</b> N/A	<b>LEL:</b> N/A	<b>UEL:</b> N/A
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**Extinguishing Media:** Non-flammable

**Special Firefighting Procedures:**

None

**Unusual Fire And Explosion Hazards:**

None

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## Section 5 - Reactivity Data

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**Stability:** Stable

**Conditions To Avoid:** None

**Incompatibility**

Product is alkaline. Avoid contact with acidic materials

**(Materials To Avoid):**

**Hazardous Decomposition:**

None

**Hazardous Polymerization:**

Will Not Occur

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## Section 6 - Health Hazard Data

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**Routes of Entry:** Inhalation? N/A

Skin? Yes/Primary

Ingestion? Yes/Secondary

**Health Hazards:**

Prolonged contact with skin can cause irritation. Contact with eyes or open abraded skin can cause severe irritation with superficial destruction of skin tissue.

**Carcinogenicity:** NTP? No

IARC? No

OSHA Regulated? No

**Signs And Symptoms of Exposure:**

Will cause skin irritation on continued contact

**Medical Conditions Generally Aggravated By Exposure:**

None known

**Emergency And First Aid Procedures:**

Ingestion: Do not induce vomiting, dilute with water or milk, get medical attention. Skin: Wash thoroughly with water. Eyes: Flush the material out immediately with plenty of water for at least 15 minutes holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Get medical attention.

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## Section 7 - Precautions For Safe Handling And Use:

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**Steps To Be Taken In Case Material Is Released Or Spilled:**

This material is in the form of a paste. Use absorbent material and sweep up.

**Waste Disposal Method:**

Non-Hazardous landfill.

**Precautions To Be Taken In Handling And Storing:**

None

**Other Precautions:**

None

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## Section 8 - Control Measures:

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<b>Respiratory Protection:</b>	None required			
<b>Ventilation:</b>	<b>Local Exhaust:</b>	Adequate	<b>Special:</b>	N/A
	<b>Mechanical:</b>	N/A	<b>Other:</b>	N/A
<b>Gloves:</b>	Rubber Gloves			
<b>Eye Protection:</b>	Goggles			
<b>Other Protective Clothing:</b>	Standard work clothing			
<b>Work/Hygienic Practices:</b>	Wash thoroughly after handling.			

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| [Home Page](#) |

| [MSDS](#) | [Wholesaler Info](#) | [Contractor Info](#) | [Homeowner & Industrial Info](#) |

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Hercules Chemical Co, Inc.  
111 South Street  
Passaic, NJ 07055-7398  
Tel 1-800-221-9330  
Fax 1-973-777-4115  
E-Mail [info@herchem.com](mailto:info@herchem.com)

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WWW Pages - developed by [Hercules Chemical Co. Inc.](#)  
For more info send [E-Mail](mailto:info@herchem.com) to [info@herchem.com](mailto:info@herchem.com)  
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**MATERIAL SAFETY DATA SHEET**

**SECTION 1 PRODUCT AND COMPANY IDENTIFICATION**  
Trade Name: OATEY ALL PURPOSE LEAK DETECTOR  
Product Use: Detecting leaks in systems under gas pressure.  
Formula: See Section 2.  
Synonyms: Leak detector.  
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>  
Oatey Phone Number: (216) 267-7100  
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300  
Prepared By: Corporate Director - Safety and Environmental Compliance  
Preparation Date: June 10, 2005

**SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS**

<u>INGREDIENTS:</u>	<u>%wt/wt:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Ethylene Glycol	40 - 70%	107-21-1	100 mg/m3 (c)	None	None
Water	30 - 60%	7732-18-5	None	None	None

(c) = Ceiling

OSHA Hazard Classification: Harmful if swallowed. Organ effects.

**SECTION 3 HAZARDS IDENTIFICATION**  
Emergency Overview:  
Ice blue liquid, which may cause eye, skin, and respiratory tract irritant.  
Ingestion can cause CNS and kidney effects and possibly death.

**SECTION 4 FIRST AID MEASURES**  
CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: If respiratory irritation develops, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

**SECTION 5 FIRE FIGHTING MEASURES**

Flashpoint / Method: Not applicable.  
Flammability: LEL = Not Applicable, UEL = Not applicable  
Extinguishing: Not applicable.  
Media:  
Special Fire Fighting: None.  
Procedure:  
Unusual Fire and Explosion: None  
Hazards:  
Hazardous: Combustion, after water is boiled off, will produce oxides  
Decomposition: of carbon.  
Products:

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill or Leak: See Section 8 for required personal protective equipment. Contain spill, stop source of leak, pump spilled material into salvage container, soak up remaining material with absorbent such as sand or clay. Prevent product from entering potable or natural water systems. Determine if reporting is required under CERCLA.  
Procedures:

**SECTION 7 HANDLING AND STORAGE**

Handling: Avoid prolonged and repeated skin contact. Launder contaminated clothing before reuse.  
Storage: Store away from direct heat source and strong oxidizing agents.  
Other: Do not pressurize, cut, weld, braze, drill, grind or heat empty containers as some flammable, hazardous or combustible residue may be present. Avoid breathing mist. For industrial use only.

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

Ventilation: Recommended to maintain mist below TLV limit.  
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice.  
Skin Protection: Oil/Chemical resistant gloves to minimize skin contact.  
Eye Protection: Goggles or face shield if contact is expected.  
Other: Eye wash and safety shower should be available.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point: 238 °F / 114 °C  
Melting Point: Not determined  
Vapor Pressure: Not determined  
Vapor Density: 1.14 (Air = 1)  
Volatile Components: Nil.  
Solubility In Water: 100%  
pH: Not determined  
Specific Gravity: 1.039  
Evaporation Rate: 3.4  
Appearance: Ice blue liquid.  
Odor: Soapy fragrance.  
Will Dissolve In: Water  
Material Is: Liquid



**SECTION 10 STABILITY AND REACTIVITY**

Stability: Stable.  
Conditions To Avoid: None.  
Hazardous  
Decomposition Oxides of carbon.  
Products:  
Incompatibility/ None.  
Materials To Avoid:  
Hazardous Will not occur.  
Polymerization:

**SECTION 11 TOXICOLOGICAL INFORMATION**

Inhalation: Excessive exposure to mist may irritate respiratory tract.  
Skin: May cause irritation. Skin absorption may occur in amounts capable of producing toxic effects.  
Eye: May cause irritation, redness and itching.  
Ingestion: May cause central nervous system depression, vomiting, drowsiness ataxia, slurred speech and renal damage. Convulsions, coma and death may result from ingestion of large quantities.  
Chronic Prolonged continued skin contact may cause dermatitis, mist may  
Toxicity: irritate respiratory tract.  
Toxicity Data: Ethylene glycol: Oral LD<sub>50</sub> (rat) 5,000 to 13,000 mg/kg.  
Sensitization: None of the components are known to cause sensitization.  
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.  
Mutagenicity: None known  
Reproductive None anticipated based on product formula. Ethylene glycol may  
Toxicity: cause birth defects based on tests with laboratory animals.  
Medical  
Conditions  
Aggravated By  
Exposure: None known.

**SECTION 12 ECOLOGICAL INFORMATION**

VOC  
Information: Unknown  
VOC Level: Unknown

**SECTION 13 DISPOSAL CONSIDERATIONS**

Waste Disposal: Dispose in accordance with current local, state and federal regulations.  
RCRA Hazardous Waste Number: Not applicable  
EPA Hazardous Waste ID Number: Not applicable  
EPA Hazard Waste Class: None

**SECTION 14 TRANSPORTATION INFORMATION**

DOT  
Proper Shipping Name: Not applicable  
Hazard Class/Packing Group: Not applicable  
UN/NA Number: Not applicable  
Hazard Labels: Not applicable  
IMDG  
Proper Shipping Name: Not applicable  
Hazard Class/Packing Group: Not applicable  
UN Number: Not applicable  
Label: Not applicable

**SECTION 15 REGULATORY INFORMATION**

Hazard Category for Section 311/312: Acute and chronic health hazards

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: 40 - 60% ethylene glycol.

CERCLA 103 Reportable: 5,000 lbs. (ethylene glycol).

California Proposition 65: This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHMIS Classification: D-2A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**SECTION 16 OTHER INFORMATION**

NFPA and HMIS:  
NFPA Hazard Signal: Health: 1 Flammability: 1 Reactivity: 0 Special: None  
HMIS Hazard Signal: Health: 1\* Flammability: 1 Reactivity: 0 PPE: B

**Disclaimer:**

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.



# MATERIAL SAFETY DATA SHEETS (MSDS) On-Line OSHA-Required Health And Safety Information!

## Section 1

### MATERIAL SAFETY DATA SHEET # 89 Hercules Megaloc™

Date Prepared: 15-Oct-95

Last Reviewed: 21-Feb-01

Hercules Chemical Co, Inc.  
111 South Street  
Passaic, NJ 07055-7398  
Tel (800) 221-9330  
Fax (800) 333-3456  
E-Mail [info@herchem.com](mailto:info@herchem.com)

Meets OSHA 29 CFR 1910.1200

## Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity;  
Common Name(s), CAS Numbers)

OSHA PEL ACGIH TLV Other Limits

% Upper Bound  
Limits if SARA  
Reportable

*This product is not classified as hazardous in accordance with OSHA 1910.1200*

**HMIS Hazard Rating:** Health: 0 Flammability: 0 Reactivity: 0 Personal Protection: A

## Section 3 - Physical/Chemical Characteristics

<b>Boiling Point</b> (°F):	<b>Specific Gravity</b> (H <sub>2</sub> O=1):	<b>Vapor Density</b> (Air=1):	<b>Vapor Pressure</b> (mm Hg):
N/A	1.2	N/A	N/A
<b>Melting Point</b> (°F):	<b>Evaporation Rate</b> (Butyl Acetate=1):	<b>Solubility in Water:</b>	
N/A		Insoluble	
<b>Appearance And Color:</b> Blue paste		<b>Odor:</b> None	

## Section 4 - Fire And Explosion Hazard Data

Flash Point:

Flammable Limits:

LEL:

UEL:

N/A

N/A

**Extinguishing Media:** Dry chemical, foam, carbon dioxide

**Special Firefighting Procedures:**

Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors to provide protection for personnel.

**Unusual Fire And Explosion Hazards:**

None

## Section 5 - Reactivity Data

**Stability:** Stable

**Conditions To Avoid:** Direct contact with open flame.

**Incompatibility**

None known

**(Materials To Avoid):**

**Hazardous Decomposition:**

CO<sub>2</sub> & CO may form on burning

**Hazardous Polymerization:**

Will not occur

## Section 6 - Health Hazard Data

**Routes of Entry: Inhalation?** N/A

**Skin?** YES/Primary

**Ingestion?** YES/Secondary

**Health Hazards:**

None

**Carcinogenicity: NTP?** NO

**IARC?** NO

**OSHA Regulated?** NO

**Signs And Symptoms of Exposure:**

None: Could be mildly irritating to certain persons on prolonged contact.

**Medical Conditions Generally Aggravated By Exposure:**

None known

**Emergency And First Aid Procedures:**

**SKIN:** Wash with soap & water. **EYES:** As with most foreign materials should eye contact occur flush eyes with plenty of water & get medical attention. **INGESTION:** Do not induce vomiting, get medical attention.

## Section 7 - Precautions For Safe Handling And Use:

**Steps To Be Taken In Case Material Is Released Or Spilled:**

Use absorbent material and sweep up.

**Waste Disposal Method:**

Non-hazardous landfill

**Precautions To Be Taken In Handling And Storing:**

None

**Other Precautions:**

Keep away from direct contact with open flame or sparks.

## Section 8 - Control Measures:

**Respiratory Protection:**

N/A

<b>Ventilation:</b>	<b>Local Exhaust:</b>	Normal ventilation	<b>Special:</b>	N/A
	<b>Mechanical:</b>	N/A	<b>Other:</b>	N/A
<b>Gloves:</b>	Rubber gloves			
<b>Eye Protection:</b>	Goggles			
<b>Other Protective Clothing:</b>	None required			
<b>Work/Hygienic Practices:</b>	Wash up after handling the material.			

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**MATERIAL SAFETY DATA SHEET**

**SECTION 1**

**PRODUCT AND COMPANY IDENTIFICATION**

Trade Name: OATEY #5 PASTE FLUX  
Product No.: 30011, 30012, 30013, 30014, 30041, 53017, 53200  
Product Use: Flux for soldering.  
Formula: See Section 2  
Synonyms: Flux for Soldering Copper Pipe  
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>  
Oatey Phone Number: (216) 267-7100 or (800) 321-9532  
Emergency Phone Numbers: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.  
Prepared By: Technical Department  
Preparation Date: May 1, 2009

**SECTION 2**

**COMPOSITION/INFORMATION ON INGREDIENTS**

<u>INGREDIENTS:</u>	<u>% wt/wt:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>
Petrolatum	60 - 100%	8009-03-8	5 mg/m3 (oil mist)	5 mg/m3 (oil mist)
Zinc Chloride	10 - 30%	7646-85-7	1 mg/m3(fume) 2 mg/m3 STEL	1 mg/m3(fume)
Ammonium Chloride	1 - 5%	12125-02-9	10 mg/m3 (fume) 20 mg/m3 STEL	None Established

**SECTION 3**

**HAZARDS IDENTIFICATION**

Emergency Overview:  
Yellow paste with a slight odor. May cause burns to the eye and skin. Inhalation of fumes may cause respiratory irritation, metal fume fever, chills, nausea and vomiting. Swallowing may cause burns to the mouth or throat, vomiting, diarrhea and kidney or liver disorders. May be harmful if swallowed. Symptoms may be delayed.

OSHA Hazard Classification: Corrosive, target organ effects

**SECTION 4**

**FIRST AID MEASURES**

CALL 1-877-740-5015 or 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. Call a physician or poison control center if irritation persists.  
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.  
Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.  
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

**SECTION 5 FIRE FIGHTING MEASURES**

Flashpoint / Method: 540 Degrees F (282 Degrees C)  
Flammability: LEL = Not determined, UEL = Not determined  
Extinguishing Small Fires: Use dry chemical, CO2, water, or foam extinguisher  
Media: Large Fires: Evacuate area and call Fire Department immediately  
Special Fire Firefighters should wear positive pressure self-contained  
Fighting breathing apparatus and full protective clothing for fires in  
Procedure: areas where chemicals are used or stored  
Unusual Fire and None known.  
Explosion  
Hazards:  
Hazardous Hydrocarbons, hydrogen chloride, zinc fumes, ammonia, smoke,  
Decomposition carbon monoxide, carbon dioxide and nitrogen oxides.  
Products:

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill or Leak Ventilate area. Stop leak if it can be done without risk. Personnel  
Procedures: cleaning up the spill should wear appropriate personal protective  
equipment. Take up spill with sand, earth or other absorbent material  
and place into a clean, dry leak-proof container.

**SECTION 7 HANDLING AND STORAGE**

Handling: Do not get in eyes. Do not get on skin or clothing. Do not take  
internally. Avoid breathing vapors or fumes. Use only with adequate  
ventilation. Wash thoroughly after handling. Keep container closed when  
not in use. Handle with care. Keep out of reach of children.  
Storage: Store in original, labeled container.  
Other: Containers, even empty will retain residue and may be harmful.

**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

Ventilation: Good general ventilation (equivalent to outdoors) should be adequate  
for normal use. For operations where the TLV may be exceeded,  
mechanical ventilation such as local exhaust may be needed to maintain  
exposure levels below applicable limits.  
Respiratory For operations where the TLV may be exceeded, a NIOSH approved  
Protection: particulate respirator or supplied air respirator is recommended.  
Equipment selection depends on contaminant type and concentration,  
select in accordance with 29 CFR 1910.134 and good industrial hygiene  
practice. For firefighting, use self-contained breathing apparatus.  
Skin Wear rubber gloves.  
Protection:  
Eye Safety glasses with sideshields or safety goggles.  
Protection:  
Other: Eye wash and safety shower should be available.



**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point: 638 Degrees F (337 Degrees C)  
Melting Point: Not determined  
Vapor Pressure: Not determined  
Vapor Density: (Air = 1) Greater than 1  
Volatile Components: 7-10%  
Solubility In Water: Negligible  
pH: Not applicable  
Specific Gravity: 1.1  
Evaporation Rate: Not applicable  
Appearance: Yellow Paste  
Odor: Very little odor  
Will Dissolve In: Methylene Chloride  
Material Is: Paste

**SECTION 10 STABILITY AND REACTIVITY**

Stability: Stable.  
Conditions To Avoid: None.  
Hazardous: Hydrocarbons, hydrogen chloride, zinc fumes, ammonia, smoke,  
Decomposition: smoke, carbon monoxide, carbon dioxide and nitrogen oxides.  
Products:  
Incompatibility/ Strong oxidizing agents, potassium, cyanides and sulfides.  
Materials To Avoid:  
Hazardous: Will not occur.  
Polymerization:

**SECTION 11 TOXICOLOGICAL INFORMATION**

Inhalation: Fumes from heated product may be corrosive to mucous membranes and the respiratory system. Fumes may cause burning sensation, coughing, wheezing, shortness of breath, cyanosis, fever, chills, muscular pain, anemia, metallic taste in the mouth, headache, nausea, vomiting, sweating, diarrhea and pulmonary edema. Fumes may cause stannosis, a mild benign pneumoconiosis. Repeated inhalation of fumes may cause occupational asthma. Symptoms may be delayed.

Skin: Contact may cause irritation, ulcerations, burns or dermatitis. Symptoms may be delayed.

Eye: Vapors or fumes may cause redness, pain, blurred vision and corneal damage. Direct contact may cause burns and eye damage with possible blindness. Symptoms may be delayed.

Ingestion: May cause irritation or burns to the mouth and throat, nausea, vomiting or diarrhea. Death may occur from strictures of the esophagus and pylorus. Symptoms may be delayed.

Toxicity Data: Petrolatum: No data available  
Zinc Chloride: Oral rat LD50: 350 mg/kg  
Ammonium Chloride: Oral rat LD50: 1,650 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Mutagenicity: None of the components have been found to be mutagenic.

Reproductive Toxicity: None of the components are known to cause adverse reproductive effects.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

**SECTION 12 ECOLOGICAL INFORMATION**

No data available.

**SECTION 13 DISPOSAL CONSIDERATIONS**

Waste Disposal: Dispose of in accordance with federal, state, and local regulations. It is the responsibility of the end-user to determine at the time of disposal of the product.

RCRA Hazardous Waste Number: None  
EPA Hazardous Waste ID Number: None  
EPA Hazard Waste Class: None

**SECTION 14 TRANSPORT INFORMATION**

DOT

Proper Shipping Name: Not regulated  
Hazard Class/Packing Group: None  
UN/NA Number: None  
Hazard Labels: None

IMDG

Proper Shipping Name: Not regulated  
Hazard Class/Packing Group: None  
UN Number: None  
Label: None

2004 North American Emergency Response Guidebook Number: None

**SECTION 15 REGULATORY INFORMATION**

Hazard Category for Section 311/312: Acute Health, Chronic Health

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<u>Chemical</u>	<u>CAS #</u>	<u>% wt</u>
Zinc Chloride	7646-85-7	10-30%

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Zinc Chloride (30% max) of 1,000 lbs, is 3,300 lbs.

<u>Chemical</u>	<u>CAS #</u>	<u>RQ, lbs.</u>
Zinc Chloride	7646-85-7	1,000
Ammonium Chloride	12125-02-6	5,000

Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain chemicals regulated under California Proposition 65.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHMIS Classification: Class E; Class D, Division 2, Subdivision B  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**SECTION 16 OTHER INFORMATION**

NFPA and HMIS:

NFPA Hazard Signal: Health: 3 Flammability: 1 Reactivity: 0 Special: None

HMIS Hazard Signal: Health: 3\* Flammability: 1 Reactivity: 0 PPE: B

Disclaimer:

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.



**OATEY #95 TINNING FLUX (LEAD FREE)**

Latest Revision Date...06/06/00

**Section 1 IDENTITY OF MATERIAL**

TRADE NAME OATEY #95 TINNING FLUX (LEAD FREE)

PRODUCT NUMBERS 30372, 30373, 30374, 30375

FORMULA N/A

SYNONYMS Flux for Copper Pipe

**SECTION 2 HAZARDOUS INGREDIENTS**

<u>INGREDIENTS</u>	<u>%</u>	<u>CAS NUMBER</u>	<u>SEC 313</u>
Zinc Chloride	15-25%	7646-85-7	Yes
Ammonium Chloride	1-4%	12125-02-9	No
Petrolatum	60-70%	8009-03-8	No
Tin	4-8%	7440-31-5	No
Copper	< 1	7440-50-8	Yes
Bismuth	< 1	7440-69-9	No

**SECTION 3 KNOWN HAZARDS UNDER 29 CFR 1910.1200**

<u>HAZARDS</u>	<u>YES</u>	<u>NO</u>	<u>HAZARDS</u>	<u>YES</u>	<u>NO</u>
Combustible Liquid		X	Skin Hazard	X	
Flammable Liquid		X	Eye Hazard	X	
Pyrophoric Material		X	Toxic Agent		X
Explosive Material		X	Highly Toxic Agent		X
Unstable Material		X	Sensitizer		X
Water Reactive Material		X	Kidney Toxin	X	
Oxidizer		X	Reproductive Toxin		X
Organic Peroxide		X	Blood Toxin		X
Corrosive Material	X		Nervous System Toxin		X

Compressed Gas	X	Lung Toxin	X
Irritant	X	Liver Toxin	X
Carcinogen NTP/IARC/OSHA (see SECTION 6)	X		

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#### **SECTION 4 REGULATION**

<u>CHEMICAL</u>	<u>TLV (TWA)</u>	<u>PEL</u>	<u>STEL</u>	<u>Hazard Action Level</u>
Zinc Chloride	1.0 mg/cu m	1.0 mg/cu m	2.0 mg/cu m	N/A
Ammonium Chloride	10.0 mg/cu m	N/A	20.0 mg/cu m	N/A
Tin	2.0 mg/cu m	2.0 mg/cu m	N/A	N/A
Copper	dust 1 mg/cu m	dust 1 mg/cu m; fume 0.1 mg/ cu	N/A	N/A

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#### **SECTION 5 REGULATED IDENTIFICATION**

DOT PROPER SHIPPING NAME	N/A
DOT HAZARD CLASS	N/A
SHIPPING ID NUMBER	N/A
EPA HAZARDOUS WASTE ID NUMBER	D-002
EPA HAZARD WASTE CLASS	Corrosive

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#### **SECTION 6 EFFECTS OF EXPOSURE**

ENTRY ROUTE	INHALE - YES INGEST - YES SKIN - YES EYE - YES
GENERAL	Zinc Chloride is corrosive to all body tissues and can cause severe burns.
INHALATION	If heated, fumes may produce respiratory irritation, fever, chills, muscular pain, vomiting and sweating.
SKIN	Contact may cause irritation, burns or dermatitis.
EYE	May cause irritation, burns or corneal damage.
INGESTION	May cause burns of mouth and throat, vomiting, diarrhea, strictures, kidney disease, shock or death.
TARGET ORGANS	Eye, Ski, mucous membranes, digestive system

---

**SECTION 7 EMERGENCY AND FIRST AID PROCEDURES - 303/623-5716 COLLECT**

SKIN	If irritation arises, wash thoroughly with soap and water. Seek medical attention if irritation persists.
EYES	If fumes cause irritation, move to fresh air and irrigate eyes with water for 15 minutes. If irritation persists, seek medical attention.
INHALATION	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.
INGESTION	Drink water. DO NOT INDUCE VOMITING and call a poison control center or physician immediately. Avoid alcoholic beverages. Never give anything by mouth to an unconscious person.

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**SECTION 8 PHYSICAL AND CHEMICAL PROPERTIES**

NFPA HAZARD SIGNAL	HEALTH 2 STABILITY 1 FLAMMABILITY 0 SPECIAL NONE
BOILING POINT	337 Degrees C
MELTING POINT	N/A
VAPOR PRESSURE	N/A
VAPOR DENSITY (AIR = 1)	@ 482 Degrees = 50
VOLATILE COMPONENTS	1-4%
SOLUBILITY IN WATER	Negligible
PH	N/A
SPECIFIC GRAVITY	1.1
EVAPORATION RATE	N/A
APPEARANCE	Green Paste
ODOR	Very little odor
WILL DISSOLVE IN	Methylene Chloride
MATERIAL IS	Paste

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**SECTION 9 FIRE AND EXPLOSION HAZARD DATA**

FLAMMABILITY	LEL = N/A UEL = N/A
FLASHPOINT AND METHOD USED	N/A
STABILITY	Stable. CONDITIONS TO AVOID: None. HAZARDOUS DECOMP. PRODUCTS: Hydrocarbons, HCl, CO, CO(2), Smoke

HAZARDOUS POLYMERIZATION Will Not Occur. CONDITIONS TO AVOID: None

INCOMPATIBILITY/ MAT. TO AVOID Strong oxidizing agents, Potassium

SPECIAL FIRE FIGHTING PROCEDURE FOR SMALL FIRES: Use dry chemical, CO(2), water or foam extinguisher. FOR LARGE FIRES: Evacuate area and call Fire Department immediately.

SECTION 10 SPILL AND DISPOSAL INFORMATION

SPILL OR LEAK PROCEDURES Ventilate, stop leak if it can be done without risk. Take up with sand or other absorbing material and place in a clean, dry, leak-proof container.

WASTE DISPOSAL Dispose of according to local, state, and federal regulations.

SECTION 11 SAFE USAGE DATA

PROTECTIVE EQUIPMENT TYPES EYES: Safety glasses with side shields. RESPIRATORY: If soldering in an enclosed area, use NIOSH approved canister. GLOVES: Rubber gloves. OTHER: Normal and good hygiene practices.

VENTILATION GENERAL MECHANICAL: Use in closed areas. LOCAL EXHAUST: Open doors and windows.

PRECAUTIONS None

SECTION 12 MANUFACTURER OR SUPPLIER DATA

FIRM NAME & MAILING ADDRESS OATEY CO., 4700 West 160th Street, P.O. Box 35906, Cleveland, Ohio 44135

OATEY PHONE NUMBER (216) 267-7100

EMERGENCY PHONE NUMBER (303) 623-5716 COLLECT

SECTION 13 DISCLAIMER

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.



**REGULAR CLEAR PVC SOLVENT CEMENT**

**SECTION 1**

**IDENTITY OF MATERIAL**

Trade Name: OATEY REGULAR CLEAR PVC SOLVENT CEMENT  
Product Numbers: 31012, 31013, 31014, 31015, 31016, 30881, 31470, 31471, 31472  
Formula: PVC Resin in Solvent Solution  
Synonyms: PVC Plastic Pipe Cement  
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>  
Oatey Phone Number: (216) 267-7100  
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300

**SECTION 2**

**COMPOSITION**

<u>INGREDIENTS:</u>	<u>%:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Acetone	0 - 5%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	
Cyclohexanone	2 - 10%	108-94-1	20 ppm(skin)	25 ppm	
Tetrahydrofuran	20 - 40%	109-99-9	200 ppm 750 ppm STEL	200 ppm	25 ppm (Mfg)
Methyl Ethyl Ketone	45 - 60%	78-93-3	200 ppm	200 ppm	
PVC Resin (Non-hazardous)	10 - 18%	9002-86-2	10 mg/m3	15 mg/m3	

**SECTION 3**

**EMERGENCY OVERVIEW**

Clear liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.  
NFPA Hazard Signal: Health: 2 Stability: 1 Flammability: 3 Special: None  
HMIS Hazard Signal: Health: 3 Stability: 1 Flammability: 3 Special: None  
OSHA Hazard Classification: Flammable, irritant, organ effects  
Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B

**SECTION 4**

**EMERGENCY AND FIRST AID PROCEDURES - CALL 1-303-623-5716 COLLECT**

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.  
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with water for 15 minutes. If irritation persists, seek medical attention.  
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.  
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

**REGULAR CLEAR PVC SOLVENT CEMENT**

**SECTION 5 FIRE FIGHTING MEASURES**

Flashpoint / Method: 0 - 5 Degrees F. / PMCC  
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume  
Extinguishing: Use dry chemical, CO<sub>2</sub>, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.  
Media:  
Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored  
Unusual Fire and Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.  
Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 12 for disposal information.

**SECTION 7 HANDLING AND STORAGE**

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.  
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.  
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

**SECTION 8 ECOLOGICAL INFORMATION**

This product is not expected to be toxic to aquatic organisms.  
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.  
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.  
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.  
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.  
VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.  
VOC Level: 550 g/l per SCAQMD Test Method 316A.

**REGULAR CLEAR PVC SOLVENT CEMENT**

**SECTION 9                    EXPOSURE CONTROLS/PERSONAL PROTECTION**

Ventilation:    Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Respiratory Protection:    For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Skin Protection:            Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Eye Protection:            Safety glasses with side shields or safety goggles.

Other:                      Eye wash and safety shower should be available.

**SECTION 10                    PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point:            151 Degrees F        /    66 C

Melting Point:            N/A

Vapor Pressure:           145 mmHg @ 20 Degrees C

Vapor Density:            (Air = 1) 2.5

Volatile Components:    86-90%

Solubility In Water:      Negligible

pH:                        N/A

Specific Gravity:          0.89 +/- 0.015

Evaporation Rate:        (BUAC = 1) = 5.5 - 8.0

Appearance:              Clear Liquid

Odor:                      Ether-Like

Will Dissolve In:         Tetrahydrofuran

Material Is:                Liquid

**SECTION 11                    STABILITY AND REACTIVITY**

Stability:                 Stable.

Conditions To Avoid:    Avoid heat, sparks, flames and other sources of ignition.

Hazardous Decomposition Products:    Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Incompatibility/ Materials To Avoid:    Oxidizing agents, alkalies, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Polymerization:    Will not occur.

**SECTION 12                    DISPOSAL INFORMATION**

Waste Disposal:          Dispose in accordance with current local, state and federal regulations.

**REGULAR CLEAR PVC SOLVENT CEMENT**

**SECTION 13**

**TOXICOLOGICAL INFORMATION**

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.

Toxicity Data: Acetone: Oral rat LD50: 5,800 mg/kg  
Inhalation rat LC50: 50,100 mg/m<sup>3</sup>/8 hours

Cyclohexanone: Oral rat LD50: 1,620 mg/kg  
Inhalation rat LC50: 8,000 ppm/4 hours  
Skin rabbit LD50: 1 mL/kg

Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg  
Inhalation rat LC50: 21,000 ppm/3 hours

Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg  
Inhalation rat LC50: 23,500 mg/m<sup>3</sup>/8 hours  
Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to Tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health are unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) as "A3," Confirmed Animal Carcinogen with Unknown Relevance to Humans.

Mutagenicity: Acetone has been positive in a mammal cell cytogenic analysis but negative in many other assays. At most, acetone is weakly genotoxic. Cyclohexanone has been positive in bacterial and mammalian assays. Tetrahydrofuran was positive in a bacterial assay. Methyl ethyl ketone is not considered genotoxic based on laboratory studies.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

**REGULAR CLEAR PVC SOLVENT CEMENT**

**SECTION 14 TRANSPORTATION INFORMATION**

DOT Less than 1 Liter (0.3 gal) Greater than 1 Liter (0.3 gal)

Proper Shipping Name: Consumer Commodity Adhesives  
Hazard Class/Packing Group: ORM-D 3, PGII  
UN/NA Number: None UN1133  
Hazard Labels: None Flammable Liquid

**IMDG**

Proper Shipping Name: Adhesives Adhesives  
Hazard Class/Packing Group: 3, II 3, II  
UN Number: UN1133 UN1133  
Label: None (Limited Quantities Class 3 (Flammable  
are excepted Liquid)  
from labeling)

RCRA Hazardous Waste Number: U002, U057, U159, U213  
EPA Hazardous Waste ID Number: D001, D035, F005  
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)  
2000 North American Emergency Response Guidebook Number: 127 or 128

**SECTION 15**

**REGULATIONS**

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<u>Chemical</u>	<u>CAS #</u>	<u>%</u>
Methyl Ethyl Ketone	78-93-3	45-60%

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (40% maximum) of 1,000 lbs, is 2,500 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject to California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

**SECTION 16 DISCLAIMER**

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.



# OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

**Section 1**

**MATERIAL SAFETY DATA SHEET # 91**  
**New Plastic Seal - "Gun Grade Cartridge"**



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07055  
 Phone (800) 221-9330  
 Fax (800) 333-3456

Date Prepared: 11/4/1996 Last Reviewed: 5/10/2001

Meets OSHA 29 CFR 1910.1200

**Section 2 - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
Diisocyanate Resin (1447-37-1)	N/A	N/A	N/A	N/A

**HMIS Hazard Rating:** Health: 1 Flammability: 1 Reactivity: 0 Personal Protection: A

**Section 3 - Physical/Chemical Characteristics**

Boiling Point (°C):	Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	1.6	Non-volatile	N/A
Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	
N/A	0.0	Insoluble	
Appearance And Color:	Gray Paste	Odor:	Mild

**Section 4 - Fire And Explosion Hazard Data**

Flash Point:	Flammable Limits:	LEL:	UEL:
None	N/A	N/A	N/A

**Extinguishing Media:** Water Spray, Chemical Foam, CO2, Dry Chemical

**Special Firefighting Procedures:**  
 Use self-contained breathing apparatus in positive pressure mode.

**Unusual Fire And Explosion Hazards:**  
 None

Continued on Next Page

**Section 5 - Reactivity Data**

**Stability:** Stable      **Conditions To Avoid:** High humidity at temperatures over 80° F.

**Incompatibility (Materials To Avoid):** Water, alcohol, amines and acids will react with the resin and destroy it or cause hardening of the sealant.

**Hazardous Decomposition:** CO, CO<sub>2</sub>, Oxides of Nitrogen

**Hazardous Polymerization:** Will not occur

**Section 6 - Health Hazard Data**

**Routes of Entry:**    **Inhalation** N/A                      **Skin** YES/Primary                      **Ingestion** YES/Secondary

**Health Hazards:**

None known

**Carcinogenicity:**    **NTP** NO            **IARC** NO            **OSHA Regulated** NO

**Signs And Symptoms of Exposure:**

**EYES:** May cause irritation. **SKIN:** May cause local irritation, may cause allergic skin rash to sensitized individuals.

**INHALATION:** May cause nausea.

**Medical Conditions Generally Aggravated By Exposure:**

None known.

**Emergency And First Aid Procedures:**

**EYES:** Flush with lukewarm water for 15 minutes. **SKIN:** Wash with soap and water. **INHALATION:** N/A.

**INGESTION:** Induce vomiting. Call physician immediately.

*Continued on Next Page*



**Section 7 - Precautions For Safe Handling And Use:****Steps To Be Taken In Case Material Is Released Or Spilled:**

Transfer to covered container. Let cure to solid rubber. Not a hazardous waste.

**Waste Disposal Method:**

Non-hazardous landfill. Dispose of large spills in compliance with all Federal, State, and local regulations.

**Precautions To Be Taken In Handling And Storing:**

None

**Other Precautions:**

None

**Section 8 - Control Measures:****Respiratory Protection:**

None

Ventilation: Local Exhaust Adequate  
Mechanical N/A

Special N/A

Gloves: Latex

Other: N/A

Eye Protection: Safety glasses

Other Protective Clothing: None required

Work/Hygienic Practices Use good hygiene practices. When possible, wash hands after using.



**F**ACTS  
axed  
AST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.



**F**ACTS<sup>SM</sup>  
axed  
AST!

## OSHA-Required Health And Safety Information!

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### Section 1

**MATERIAL SAFETY DATA SHEET # 22**

*Sta Put® Plumbers Putty*

Date Prepared: 12/17/1986 Last Reviewed: 5/2/2001

Meets OSHA 29 CFR 1910.1200



**MATERIAL  
SAFETY  
INFORMATION  
SERVICE**

Hercules Chemical Company Inc.  
111 South Street  
Passaic NJ 07055  
Phone (800) 221-9330  
Fax (800) 333-3456

### Section 2 - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity;  
Common Name(s), CAS Numbers)

OSHA PEL

ACGIH TLV

Other Limits

Upper Bound  
Limit if SARA  
Reportable

This product is not classified as hazardous in accordance with OSHA 1910.1200

HMIS Hazard Rating: Health: 0 Flammability: 0 Reactivity: 0 Personal Protection: A

### Section 3 - Physical/Chemical Characteristics

Boiling Point (°C):	Specific Gravity (H <sub>2</sub> O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	2.15 to 2.35	N/A	N/A
Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	
N/A		Insoluble	
Appearance And Color:	Beige color mastic	Odor:	Very mild vegetable oil odor.

### Section 4 - Fire And Explosion Hazard Data

Flash Point:	Flammable Limits:	LEL:	UEL:
N/A	N/A		

Extinguishing Media: Dry chemical or carbon dioxide or water.

Special Firefighting Procedures:

As appropriate for surrounding fire.

Unusual Fire And Explosion Hazards:

None

Continued on Next Page

**Section 5 - Reactivity Data**

Stability: Stable Conditions To Avoid: None

Incompatibility (Materials To Avoid): Strong oxidizers

Hazardous Decomposition: Carbon dioxide and carbon monoxide may be released on burning.

Hazardous Polymerization: Will Not Occur

**Section 6 - Health Hazard Data**

Routes of Entry: Inhalation N/A Skin YES/Primary Ingestion YES/Primary

Health Hazards:

None known

Carcinogenicity: NTP NO IARC NO OSHA Regulated NO

Signs And Symptoms of Exposure:

None

Medical Conditions Generally Aggravated By Exposure:

None known

Emergency And First Aid Procedures:

EYES: As with most foreign materials should eye contact occur, flush eyes with plenty of water and get medical attention. SKIN: Wash with soap and water. INGESTION: Do not induce vomiting. Call a physician.

*Continued on Next Page*

**Section 7 - Precautions For Safe Handling And Use:**

Steps To Be Taken In Case Material Is Released Or Spilled:

Sweep up

Waste Disposal Method:

Non-hazardous landfill

Precautions To Be Taken In Handling And Storing:

None normally required

Other Precautions:

None

**Section 8 - Control Measures:**

Respiratory Protection:

None required for putty. If putty dries and dust is created dust-type respirator required.

Ventilation: Local Exhaust Adequate  
Mechanical N/A

Special N/A

Gloves: Not normally required.

Other: N/A

Eye Protection: None required

Other Protective Clothing: None

Work/Hygienic Practices Wash thoroughly after handling.



For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.



# OSHA-Required Health And Safety Information!

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**Section 1**

**MATERIAL SAFETY DATA SHEET # 12**  
**Pro Dope®**



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07055  
 Phone (800) 221-9330  
 Fax (800) 333-3456

Date Prepared: 9/14/1989 Last Reviewed: 1/22/2007

Meets OSHA 29 CFR 1910.1200

**Section 2 - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
This product is not classified as hazardous in accordance with OSHA 1910.1200				

**HMIS Hazard Rating:** Health: 0 Flammability:0 Reactivity: 0 Personal Protection: A

**Section 3 - Physical/Chemical Characteristics**

Boiling Point (°F):	Specific Gravity (H <sub>2</sub> O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	1.61	N/A	N/A
Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	
N/A	N/A	Insoluble	
Appearance And Color:	Gray Paste	Odor:	None

**Section 4 - Fire And Explosion Hazard Data**

Flash Point:	Flammable Limits:	LEL:	UEL:
N/A	N/A		

**Extinguishing Media:** Dry chemical, foam, carbon dioxide

**Special Firefighting Procedures:**

Use water to cool fire-exposed containers. If a leak or spill has not ignited, use water spray to disperse the vapors to provide protection for personnel

**Unusual Fire And Explosion Hazards:**

None

Continued on Next Page

**Section 5 - Reactivity Data**

**Stability:** Stable      **Conditions To Avoid:** Direct contact with open flame

**Incompatibility**      None known

**(Materials To Avoid):**

**Hazardous Decomposition:** CO<sub>2</sub> and CO may form on burning

**Hazardous Polymerization:** Will not occur

**Section 6 - Health Hazard Data**

**Routes of Entry:**    **Inhalation** N/A      **Skin** YES/Primary      **Ingestion** YES/Secondary

**Health Hazards:**

None

**Carcinogenicity:**    **NTP** NO      **IARC** NO      **OSHA Regulated** NO

**Signs And Symptoms of Exposure:**

None. Could be mildly irritating to certain persons on prolonged contact.

**Medical Conditions Generally Aggravated By Exposure:**

None known

**Emergency And First Aid Procedures:**

**SKIN:** Wash with soap & water. **EYES:** As with most foreign materials should eye contact occur, flush eyes with plenty of water and get medical attention if irritation occurs. **INGESTION:** Do not induce vomiting, get medical attention.

*Continued on Next Page*



**Section 7 - Precautions For Safe Handling And Use:****Steps To Be Taken In Case Material Is Released Or Spilled:**

Use absorbent material and sweep up.

**Waste Disposal Method:**

Non-Hazardous landfill

**Precautions To Be Taken In Handling And Storing:**

None

**Other Precautions:**

Keep away from direct contact with open flame or sparks.

**Section 8 - Control Measures:****Respiratory Protection:**

N/A

Ventilation: Local Exhaust Normal ventilation  
Mechanical N/A

Special N/A

Other: N/A

Gloves: Rubber gloves

Eye Protection: Safety glasses with side shield

**Other Protective**

Clothing: None required

Work/Hygienic Practices Wash up after handling the material.



For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.



# OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

**Section 1**

**MATERIAL SAFETY DATA SHEET # 24**  
**Pro Poxy 20**



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07055  
 Phone (800) 221-9330  
 Fax (800) 333-3456

Date Prepared: 1/28/1987      Last Reviewed: 6/25/2004

Meets OSHA 29 CFR 1910.1200

**Section 2 - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
2,4,6, Tri (Dimethylaminomethyl) Phenol (90-72-2)	N/A	5PPM	N/A	--
Epoxy Resin (Diglycidyl Ether of Bisphenol A) (25068-38-6)	N/A	19.8g/kg (Oral LD50 Rabbit) 20g/kg (Dermal LD50 Rabbit)	N/A	--

**HMIS Hazard Rating:** Health: 1 Flammability: 0 Reactivity: 0 Personal Protection: B

**Section 3 - Physical/Chemical Characteristics**

Boiling Point (°F):	Specific Gravity (H2O = 1):	Vapor Density (Air = 1):	Vapor Pressur (mm Hg):
N/A	1.9	N/A	N/A
Melting Point (° F)	Evaporation Rate: (Butyl Acetate = 1)	Solubility in Water:	
N/A		Not soluble	
Appearance And Color:	2 components in mastic form: Off-white gray/black	Odor:	Mercaptan odor

**Section 4 - Fire And Explosion Hazard Data**

Flash Point:	Flammable Limits	LEL:	UEL:
None	N/A		

**Extinguishing Media:** Water spray, foam, CO2, and dry chemical.

**Special Firefighting Procedures:**  
 None

**Unusual Fire And Explosion Hazards:**  
 None

*Continued on Next Page*

**Section 5 - Reactivity Data**

Stability: Stable Conditions To Avoid: None

Incompatibility (Materials To Avoid): None

Hazardous Decomposition: Carbon monoxide, aldehydes, acids, oxides of sulfur and nitrogen may be formed.

Hazardous Polymerization: Will Not Occur

**Section 6 - Health Hazard Data**

Routes of Entry Inhalation N/A Skin YES/Secondary Ingestion YES/Secondary

**Health Hazards**

None known

Carcinogenicity NTP NO IARC NO OSHA Regulated NO

**Signs And Symptoms of Exposure:**

None

**Medical Conditions Generally Aggravated By Exposure:**

None

**Emergency And First Aid Procedures:**

SKIN CONTACT: After using, wash hands with soap and water. EYE CONTACT: Flush with water for 15 minutes. Get medical attention. INGESTION: Induce vomiting, Get medical attention immediately.

*Continued on Next Page*

**Section 7 - Precautions For Safe Handling And Use:**

**Steps To Be Taken In Case Material Is Released Or Spilled:**

Sweep up in normal manner

**Waste Disposal Method:**

Non-hazardous landfill

**Precautions To Be Taken In Handling And Storing:**

None

**Other Precautions:**

None

**Section 8 - Control Measures:**

**Respiratory Protection:**

N/A

**Ventilation:** Local Exhaust Adequate  
Mechanical N/A

**Special** N/A  
**Other** N/A

**Gloves:** Polyethylene gloves for prolonged use.

**Eye Protection:** Safety goggles

**Other Protective Clothing:** None required

**Work/Hygienic Practice:** Wash thoroughly after handling.

**Additional Information:**



For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.



# MATERIAL SAFETY DATA SHEET



4700 W. 160TH Street  
P.O. Box 35906  
Cleveland, Ohio 44135  
Emergency Tel No.  
(303) 623-5716 Collect

## REGULAR CLEAR PVC SOLVENT CEMENT

### SECTION 1

#### IDENTITY OF MATERIAL

Trade Name: OATEY REGULAR CLEAR PVC SOLVENT CEMENT  
Product Numbers: 31012, 31013, 31014, 31015, 31016, 30881  
Formula: PVC Resin in Solvent Solution  
Synonyms: PVC Plastic Pipe Cement  
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. <http://www.oatey.com>  
Oatey Phone Number: (216) 267-7100  
Emergency Phone Numbers: For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300

### SECTION 2

#### COMPOSITION

<u>INGREDIENTS:</u>	<u>%:</u>	<u>CAS NUMBER:</u>	<u>ACGIH TLV TWA:</u>	<u>OSHA PEL TWA:</u>	<u>OTHER:</u>
Acetone	0 - 5%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	
Cyclohexanone	5 - 10%	108-94-1	25 ppm(skin)	50 ppm	
Tetrahydrofuran	25 - 40%	109-99-9	200 ppm 750 ppm STEL	200 ppm	25 ppm (Mfg)
Methyl Ethyl Ketone	45 - 60%	78-93-3	200 ppm	200 ppm	
PVC Resin	10 - 16%	9002-86-2	10 mg/m3	15 mg/m3	

(Non-hazardous)

### SECTION 3

#### EMERGENCY OVERVIEW

Clear liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.  
NFPA Hazard Signal: Health: 2 Stability: 1 Flammability: 3 Special: None  
HMIS Hazard Signal: Health: 3 Stability: 1 Flammability: 3 Special: None  
OSHA Hazard Classification: Flammable, irritant, organ effects  
Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B

### SECTION 4

#### EMERGENCY AND FIRST AID PROCEDURES - CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.  
Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with water for 15 minutes. If irritation persists, seek medical attention.  
Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.  
Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

# MATERIAL SAFETY DATA SHEET



4700 W. 160TH Street  
P.O. Box 35906  
Cleveland, Ohio 44135  
Emergency Tel No.  
(303) 623-5716 Collect

## REGULAR CLEAR PVC SOLVENT CEMENT

### SECTION 9 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures product chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.

Eye Protection: Safety glasses with sideshields or safety goggles.

Other: Eye wash and safety shower should be available.

### SECTION 10 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: 151 Degrees F / 66 C  
Melting Point: N/A  
Vapor Pressure: 145 mmHg @ 20 Degrees C  
Vapor Density: (Air = 1) 2.5  
Volatile Components: 86-90%  
Solubility In Water: Negligible  
pH: N/A  
Specific Gravity: 0.89 +/- 0.015  
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0  
Appearance: Clear Liquid  
Odor: Ether-Like  
Will Dissolve In: Tetrahydrofuran  
Material Is: Liquid

### SECTION 11 STABILITY AND REACTIVITY

Stability: Stable.

Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.

Hazardous Decomposition Products: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

Incompatibility/ Materials To Avoid: Oxidizing agents, alkalies, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.

Hazardous Polymerization: Will not occur.

### SECTION 12 DISPOSAL INFORMATION

Waste Disposal: Dispose in accordance with current local, state and federal regulations.



# MATERIAL SAFETY DATA SHEET



4700 W. 160TH Street  
P.O. Box 35906  
Cleveland, Ohio 44135  
Emergency Tel No.  
(303) 623-5716 Collect

## REGULAR CLEAR PVC SOLVENT CEMENT

### SECTION 14 TRANSPORTATION INFORMATION

DOT Less than 1 Liter (0.3 gal) Greater than 1 Liter (0.3 gal)

Proper Shipping Name:	Consumer Commodity	Adhesives
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1133
Hazard Labels:	None	Flammable Liquid

#### IMDG

Proper Shipping Name:	Adhesives	Adhesives
Hazard Class/Packing Group:	3, II	3, II
UN Number:	UN1133	UN1133
Label:	None (Limited Quantities are excepted from labeling)	Class 3 (Flammable Liquid)

RCRA Hazardous Waste Number: U002, U057, U159, U213

EPA Hazardous Waste ID Number: D001, D035, F005

EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

2000 North American Emergency Response Guidebook Number: 127 or 128

### SECTION 15

#### REGULATIONS

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<u>Chemical</u>	<u>CAS #</u>	<u>%</u>
Methyl Ethyl Ketone	78-93-3	45-60%

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (40% maximum) of 1,000 lbs, is 2,500 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposures to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. Oatey strongly encourages the use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 9 to minimize exposure to these chemicals.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

### SECTION 16 DISCLAIMER

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

REGULAR CLEAR PVC SOLVENT CEMENT

**SECTION 13**

**TOXICOLOGICAL INFORMATION**

Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.

Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.

Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.

Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.

Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.

Toxicity Data:

Acetone:	Oral rat LD50: 5,800 mg/kg
	Inhalation rat LC50: 50,100 mg/m <sup>3</sup> /8 hours
Cyclohexanone:	Oral rat LD50: 1,620 mg/kg
	Inhalation rat LC50: 8,000 ppm/4 hours
	Skin rabbit LD50: 1 mL/kg
Tetrahydrofuran:	Oral rat LD50: 1,650 mg/kg
	Inhalation rat LC50: 21,000 ppm/3 hours
Methyl Ethyl Ketone:	Oral rat LD50: 2,737 mg/kg
	Inhalation rat LC50: 23,500 mg/m <sup>3</sup> /8 hours
	Skin rabbit LD50: 6,480 mg/kg

Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to Tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health are unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF.

Mutagenicity: Acetone has been positive in a mammal cell cytogenetic analysis but negative in many other assays. At most, acetone is weakly genotoxic. Cyclohexanone has been positive in bacterial and mammalian assays. Tetrahydrofuran was positive in a bacterial assay. Methyl ethyl ketone is not considered genotoxic based on laboratory studies.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran have been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

**REGULAR CLEAR PVC SOLVENT CEMENT**

**SECTION 5 FIRE FIGHTING MEASURES**

Flashpoint / Method: 0 - 5 Degrees F. / PMCC  
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume  
Extinguishing: Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.  
Media:  
Special Fire Fighting Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored  
Unusual Fire and Explosion: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.  
Hazards: Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.  
Hazardous Decomposition Products:

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 12 for disposal information.

**SECTION 7 HANDLING AND STORAGE**

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.  
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.  
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

**SECTION 8 ECOLOGICAL INFORMATION**

This product is not expected to be toxic to aquatic organisms.  
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.  
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.  
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.  
Acetone: 96 hour LC50 for fish is greater than 100 mg/L.  
VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.  
VOC Level: 550 g/l per SCAQMD Test Method 316A.





# MATERIAL SAFETY DATA SHEETS (MSDS) On-Line OSHA-Required Health And Safety Information!

## Section 1

### MATERIAL SAFETY DATA SHEET # 26 Hercules Roof & Flashing Sealant

Date Prepared: 19-Dec-89

Last Reviewed: 02-May-01

Hercules Chemical Co, Inc.  
111 South Street  
Passaic, NJ 07055-7398  
Tel (800) 221-9330  
Fax (800) 333-3456  
E-Mail [info@herchem.com](mailto:info@herchem.com)

Meets OSHA 29 CFR 1910.1200

## Section 2 - Hazardous Ingredients/Identity Information

### Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)

% Upper Bound  
Limits if SARA  
Reportable

*\*These components are totally encapsulated in paste.*

	OSHA PEL	ACGIH TLV	Other Limits	% Upper Bound Limits if SARA Reportable
Asphalt (8052-42-4)	400PPM	500PPM	N/A	--
Mineral Spirits (64741-41-9)	400PPM	500PPM	N/A	--
Attapulgate Clay (8031-18-3)*	N/A		N/A	--
Active Cationic Salts (2871-67-9)*	N/A	N/A	N/A	--
Cellulosic Fibers (9004-34-6)*	N/A	N/A	N/A	--

**HMIS Hazard Rating:** Health: 2 Flammability: 2 Reactivity: 0 Personal Protection: C

## Section 3 - Physical/Chemical Characteristics

<b>Boiling Point</b> (°F):	<b>Specific Gravity</b> (H <sub>2</sub> O=1):	<b>Vapor Density</b> (Air=1):	<b>Vapor Pressure</b> (mm Hg):
315	1.1	3.9	@20 °C 1
<b>Melting Point</b> (°F):	<b>Evaporation Rate</b> (Butyl Acetate=1):	<b>Solubility in Water:</b>	
N/A		Negligible	
<b>Appearance And Color:</b> Black paste		<b>Odor:</b> Mild solvent odor	

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## Section 4 - Fire And Explosion Hazard Data

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<b>Flash Point:</b> 100° F TCC	<b>Flammable Limits:</b>	<b>LEL:</b> 1.0%	<b>UEL:</b> 7.0%
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**Extinguishing Media:** Foam, Carbon Dioxide, Water Fog

**Special Firefighting Procedures:**

Do not use water as liquid

**Unusual Fire And Explosion Hazards:**

None

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## Section 5 - Reactivity Data

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**Stability:** Stable

**Conditions To Avoid:** None

**Incompatibility**

None known

**(Materials To Avoid):**

**Hazardous Decomposition:**

Carbon monoxide & carbon dioxide

**Hazardous Polymerization:**

None known

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## Section 6 - Health Hazard Data

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**Routes of Entry: Inhalation?** YES/Primary

**Skin?** YES/Primary

**Ingestion?** YES/Secondary

**Health Hazards:**

Inhalation of high vapor concentrations can cause dizziness and headaches. Prolonged skin contact can lead to dry and irritated skin possibly causing dermatitis.

**Carcinogenicity: NTP?** NO

**IARC?** NO

**OSHA Regulated?** NO

**Signs And Symptoms of Exposure:**

Dizziness, nausea

**Medical Conditions Generally Aggravated By Exposure:**

N/A

**Emergency And First Aid Procedures:**

Remove to fresh air and call physician as soon as possible. If unconscious, give artificial respiration. If splashed in eyes, flush thoroughly with water.

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## Section 7 - Precautions For Safe Handling And Use:

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**Steps To Be Taken In Case Material Is Released Or Spilled:**

Remove all sources of ignition (Flames, hot surfaces and electrical, static or frictional sparks). Avoid breathing vapors. Ventilate area. Remove with inert absorbent and non-sparking tools.

**Waste Disposal Method:**

Dispose in accordance with local, state and federal regulations. Incinerate in approved facility. Do not incinerate in closed containers.

**Precautions To Be Taken In Handling And Storing:**

Do not store above 120 °F. Store large quantities in buildings designed and protected for storage of NFPA combustible liquids.

**Other Precautions:**

None

---

**Section 8 - Control Measures:**

---

**Respiratory Protection:** In confined spaces or other circumstances where adequate ventilation cannot be assured use NIOSH-approved respirator, positive pressure airline mask, or self contained breathing apparatus.

**Ventilation:** **Local Exhaust:** Adequate **Special:** N/A  
**Mechanical:** N/A **Other:** N/A

**Gloves:** Regular working gloves.

**Eye Protection:** Use safety eyewear.

**Other Protective Clothing:** Clothing that prevents skin contact with material.

**Work/Hygienic Practices:** Prevent prolonged skin contact with contaminated clothing.

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| [Home Page](#) |

| [MSDS](#) | [Wholesaler Info](#) | [Contractor Info](#) | [Homeowner & Industrial Info](#) |

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Hercules Chemical Co, Inc.

111 South Street

Passaic, NJ 07055-7398

Tel 1-800-221-9330

Fax 1-973-777-4115

E-Mail [info@herchem.com](mailto:info@herchem.com)

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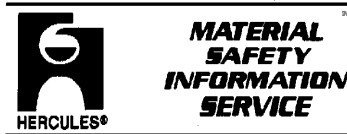
WWW Pages - developed by [Hercules Chemical Co. Inc.](#)

For more info send [E-Mail](mailto:info@herchem.com) to [info@herchem.com](mailto:info@herchem.com)

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# Material Safety Data Sheet # 340

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07055-7398  
 Information Telephone: 1-800 221-9330  
 Internet: www.herchem.com

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1"> <tr> <td>HEALTH</td> <td>3</td> </tr> <tr> <td>FLAMMABILITY</td> <td>0</td> </tr> <tr> <td>REACTIVITY</td> <td>2</td> </tr> </table>	HEALTH	3	FLAMMABILITY	0	REACTIVITY	2		
HEALTH	3								
FLAMMABILITY	0								
REACTIVITY	2								

Preparation Date Oct 1, 2007

Revision Date

Revision Number 0

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identity:** HERCULES SIZZLE

**Intended Use:** Delimiting solution

**Manufacturer:** Hercules Chemical Company, Inc.  
 111 South Street  
 Passaic, New Jersey 07055-7398

**Information Telephone:** (800) 221-9330

**Internet:** <http://www.herchem.com>

**Emergency Phone:** CHEMTREC: (800) 424-9300

**MSDS Date of Preparation:** 10/01/2007

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Light yellow corrosive liquid. Ingestion causes severe burns to mouth, esophagus and stomach. If ingested, do not induce vomiting, call a doctor immediately. Vapors are extremely irritating. Corrosive to most metals with evolution of flammable hydrogen gas. Do not mix with strong alkalis such as sodium or potassium hydroxide.

Potential Health Effects.

**Inhalation:** Fumes from product will cause injury to respiratory tract. Severe exposure can cause lung damage.

**Ingestion:** Severe damage to internal organs (esophagus & pylorus) will occur if swallowed in large quantities. Call a doctor immediately.

**Eye:** Will cause severe eye burn.

**Skin:** Prolonged contact will cause skin burns.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Wt/Wt %	OSHA PEL	ACGIH TLV	Other Limits
Hydrogen Chloride	7647-01-0	30-35	5 ppm	5 ppm	50 ppm IDLH
Water	7732-18-5	65-70	N/A	N/A	

HMIS Hazard Rating: 3 0 2 H

**4. EMERGENCY AND FIRST AID PROCEDURES.**

**Eye:** Immediately flush victim's eyes with large quantities of water, for 15 minutes, holding the eyelids apart. Get medical attention.

**Skin:** Wash affected area with soap and water. Remove contaminated clothing. If burn/rash appears, consult with a doctor.

**Ingestion:** DO NOT INDUCE VOMITING. If conscious, dilute by giving large quantities of water or milk. Get medical attention immediately.

**Inhalation:** Call a physician. Remove to fresh air. If not breathing, give artificial respiration. Give oxygen if the victim has difficult breathing.

**Note:** Never give anything by mouth to an unconscious person.

**5. FIRE FIGHTING MEASURES**

**Flashpoint:** Not flammable

**Flammable Limits:** N/A

**Autoignition Temperature:** N/A

**Extinguishing Media:** Water fog, Foam, Dry Chemical, Carbon Dioxide

**Unusual Fire or Explosion Hazards:** Contact with common metals may produce flammable, and potentially explosive hydrogen gas.

**Special Fire-Fighting Instructions:** Firefighters and others who might be exposed to products of combustion, should wear (NIOSH approved) positive pressure self-contained breathing apparatus and full protective clothing. Neutralize with soda ash or slaked lime

**Hazardous Combustion Products:** Hydrogen chloride gas and hydrogen.

**6. ACCIDENTAL RELEASE MEASURES**

**Spills/Leak Control:** Evacuate area, keep upwind until gas has dispersed. If necessary to enter the spill area, wear approved full face respirators with acid cartridges. Wear acid resistant clothing.. For large spills, wear self contained breathing apparatus and full protective clothing including shoes. Build a dike around the spill. Neutralize with Lime or Soda Ash. Clean and dispose in accordance with federal, State and Local regulations.

**7. HANDLING AND STORAGE**

**Handling:** Keep containers tightly closed and away from heat. Protect containers from damage.

**Storage:** Store in original containers and away from heat. Keep containers closed when not in use.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**OSHA PEL** 5 ppm Ceiling, **ACGIH TLV** 5 ppm Ceiling

**Respiratory Protection:** Full face respirator with HCL fumes cartridges for response to small spills. Self contained breathing apparatus.

**Engineering Controls:** Use with general or local exhaust ventilation.

**Skin Protection:** Wear Rubber or plastic gloves.

**Eye Protection:** Wear Chemical Safety goggles or Safety glasses and a face shield.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance And Odor:</b> Light Yellow liquid with a pungent acid odor.	<b>Boiling Point:</b> 181°F <b>Freezing Point:</b> -51°F
<b>Physical State:</b> liquid	<b>Vapor Pressure:</b> 35
<b>Vapor Density:</b> > 1.27	<b>Evaporation Rate:</b> (Butyl Acetate=1) > 1.0
<b>Solubility In Water:</b> Complete	<b>Volatile Components:</b> 100%
<b>Specific Gravity:</b> 1.14 to 1.16	<b>Viscosity:</b> N/A
<b>Melting Point:</b> N/A	<b>pH:</b> below 1.

## 10. STABILITY AND REACTIVITY

**Stability:** Stable.

**Conditions to avoid:** Open flames, sparks, and ignition sources.

**Incompatibility:** Strong oxidizers such as liquid chlorine, sodium or calcium hypochlorite, and pure oxygen.

**Hazardous Decomposition Products:** Carbon monoxide, oxides of sulfur and other decomposition products may form from incomplete combustion.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

### HEALTH HAZARDS:

**Oral LD50**—900 mg/Kg rabbit

**LC50**—3124 ppm/lhr Rat

**Inhalation:** Corrosive and irritating to respiratory tract. Results in coughing, choking and inflammation of the respiratory tract.

**Eye:** Causes severe irritation and painful burns to the eyes and eye lids. Failure to irrigate the eyes immediately with copious amounts of water, could cause visual impairment and/or total loss of vision

**Skin:** Will cause severe burns unless washed off immediately. Repeated skin contact may lead to dermatitis.

**Ingestion: Corrosive to mouth and stomach.** Do not induce vomiting. Dilute with large amount of water.

**Sensitization:** None.

**Chronic:** Prolonged exposure to low level concentration of hydrochloric acid vapor may cause discoloration and erosion of teeth, bleeding of nose and gums, and ulcers of the nasal mucosa.

**Carcinogenicity:** Not a carcinogen

**Mutagenicity:** Not mutagenic.

**Medical Conditions Aggravated by Exposure:** It may also aggravate Asthma, bronchitis, emphysema, bronchial hyperactivity, skin allergies and eczema

**Reproductive Toxicity:** None

**Acute Toxicity Values:** Vapors can be fatal in enclosed areas without adequate ventilation.

## 12. ECOLOGICAL INFORMATION

**Environmental Toxicity:** This material is expected to be toxic to aquatic life.

**Environmental Transport:** Unknown.

**Environmental Degradation:** Not expected to biodegrade

**Soil Absorption/Mobility:** When released in the soil, it may leach into ground water.

## 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Federal, State, and Local regulations.

**14. TRANSPORT INFORMATION**

DOT: Proper Shipping Name: Hydrochloric Acid, Solution  
Hazard Class: 8  
UN Number: 1789  
Packing Group: II  
RQ: 5000 lbs

**15. REGULATORY INFORMATION****EPA Regulation:****TITLE 311/312 Hazard Classification**

ACUTE: yes

CHRONIC: Yes

FIRE: No, REACTIVITY: No, PRESSURE: No

Extremely Hazardous substance. No

TSCA Inventory: All the components in this product are listed on the TSCA inventory.

**WHMIS.**

This MSDS has been prepared according to the hazard criteria of the controlled Products regulation (CPR). And the MSDS contains all of the information required by the CPR

**16. OTHER INFORMATION****DISCLAIMER:**

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Hercules cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

# OSHA-Required Health And Safety Information!

This Material Safety Data Sheet (MSDS) was requested moments ago from Hercules Automated Fax Information System. Please forward it immediately to the person in charge of MSDS's, or retain it at the machine until claimed.

**Section 1**

**MATERIAL SAFETY DATA SHEET # 22**  
**Sta Put®**



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07055  
 Phone (800) 221-9330  
 Fax (800) 333-3456

Date Prepared: 12/17/1986      Last Reviewed: 11/29/2006

Meets OSHA 29 CFR 1910.1200

**Section 2 - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity; Common Name(s), CAS Numbers)	OSHA PEL	ACGIH TLV	Other Limits	Upper Bound Limit if SARA Reportable
This product is not classified as hazardous in accordance with OSHA 1910.1200				

**HMIS Hazard Rating:** Health: 0 Flammability: 0 Reactivity: 0 Personal Protection: A

**Section 3 - Physical/Chemical Characteristics**

<b>Boiling Point (°F):</b>	<b>Specific Gravity (H2O = 1):</b>	<b>Vapor Density (Air = 1):</b>	<b>Vapor Pressure (mm Hg):</b>
N/A	1.89	N/A	N/A
<b>Melting Point (° F)</b>	<b>Evaporation Rate: (Butyl Acetate = 1)</b>	<b>Solubility in Water:</b>	
N/A		Insoluble	
<b>Appearance And Color:</b>	Beige color mastic	<b>Odor:</b> Very mild vegetable oil odor.	

**Section 4 - Fire And Explosion Hazard Data**

<b>Flash Point:</b>	<b>Flammable Limits:</b>	<b>LEL:</b>	<b>UEL:</b>
N/A	N/A		

**Extinguishing Media:** Dry chemical or carbon dioxide or water.

**Special Firefighting Procedures:**  
 As appropriate for surrounding fire.

**Unusual Fire And Explosion Hazards:**  
 None

Continued on Next Page

**Section 5 - Reactivity Data**

Stability: Stable                      Conditions To Avoid: None  
 Incompatibility (Materials To Avoid): Strong oxidizers  
 Hazardous Decomposition: Carbon dioxide and carbon monoxide may be released on burning.

Hazardous Polymerization: Will Not Occur

**Section 6 - Health Hazard Data**

Routes of Entry:    Inhalation    N/A                                      Skin    YES/Primary                      Ingestion    YES/Primary

Health Hazards:  
 None known

Carcinogenicity:    NTP    NO                      IARC    NO                      OSHA Regulated    NO

Signs And Symptoms of Exposure:  
 None

Medical Conditions Generally Aggravated By Exposure:  
 None known

Emergency And First Aid Procedures:  
 EYES: As with most foreign materials should eye contact occur, flush eyes with plenty of water and get medical attention. SKIN: Wash with soap and water. INGESTION: Do not induce vomiting. Call a physician if there is any discomfort.

*Continued on Next Page*

**Section 7 - Precautions For Safe Handling And Use:****Steps To Be Taken In Case Material Is Released Or Spilled:**

Sweep up

**Waste Disposal Method:**

Non-hazardous landfill

**Precautions To Be Taken In Handling And Storing:**

None normally required

**Other Precautions:**

None

**Section 8 - Control Measures:****Respiratory Protection:**

None required for putty. If putty dries and dust is created dust-type respirator required.

**Ventilation:** Local Exhaust Adequate  
Mechanical N/A**Special** N/A**Other:** N/A**Gloves:** Not normally required.**Eye Protection:** None required**Other Protective****Clothing:** None**Work/Hygienic Practices** Wash thoroughly after handling.**Additional Information:****FACTS**  
Faxed  
FAST!

For Hercules Material Safety Data Sheets by fax anytime, day or night, just call 1-800-942-INFO (1-800-942-4636) from any Touch-Tone phone. Have your fax number ready. Checking the product label for the correct MSDS # will save time.







MSDS No.: 270  
Revision No.: 004  
Revision Date: 10/11/05  
Page: 1 of 2

## MATERIAL SAFETY DATA SHEET

**Product name:** Mineral wool  
**Description:** Synthetic vitreous fiber  
**Supplier:** Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121  
**Emergency # (Chem-Trec.):** 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

## INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	PEL:	TLV:	STEL:
Slag wool fiber	65997-17-3	NE	1 fiber / cc	NE
Phenolic resin	09003-35-4	NE	NE	NE
Polyvinyl alcohol	09002-89-5	NE	NE	NE

**Abbreviations:** PEL = OSHA Permissible Exposure Limit. TLV = ACGIH Threshold Limit Value. STEL = Short Term Exposure Limit. NE = None Established. NA = Not Applicable.

## PHYSICAL DATA

<b>Appearance:</b>	2' x 4' x 4" sheets.	<b>Odor:</b>	Negligible.
<b>Boiling Point:</b>	Not applicable.	<b>Vapor Pressure:</b>	Not applicable.
<b>Melting Point:</b>	Approx. 2400° F	<b>VOC Content:</b>	< 1% w/w
<b>Evaporation Rate:</b>	Not applicable.	<b>Solubility in Water:</b>	Insoluble.
<b>pH:</b>	Not applicable.	<b>Specific Gravity:</b>	Not determined.

## FIRE AND EXPLOSION HAZARD DATA

<b>Flash Point:</b>	Not applicable.	<b>Flammable Limits:</b>	Not applicable.
<b>Extinguishing Media:</b>	As appropriate for surrounding fire; material does not burn.		
<b>Special Fire Fighting Procedures:</b>	Soak cartons to help prevent the spread of fire. Use a self-contained breathing apparatus when fighting fires involving chemicals.		
<b>Unusual Fire and Explosion Hazards:</b>	None known.		

## REACTIVITY DATA

<b>Stability:</b>	Stable.	<b>Hazardous Polymerization:</b>	Will not occur.
<b>Incompatibility:</b>	Strong acids.		
<b>Hazardous Decomposition Products:</b>	Thermal decomposition products can be formed at temperatures exceeding 2000° F. Thermal decomposition can yield CO and CO <sub>2</sub> .		
<b>Conditions to Avoid:</b>	None known.		

## HEALTH HAZARD DATA

<b>Known Hazards:</b>	<b>Acute:</b> Eye, skin and respiratory irritation. <b>Chronic:</b> Respiratory impairment.		
<b>Routes of Exposure:</b>	Inhalation, Dermal.		
<b>Signs and Symptoms of Exposure:</b>	<b>Eyes:</b> Mechanical irritation. <b>Skin:</b> Itching, irritation. <b>Inhalation:</b> Nose, throat and upper respiratory tract irritation.		
<b>Carcinogenicity:</b>	Slag wool has been classified by the IARC as Group 3 – Unclassifiable as to Carcinogenicity in Humans.		
<b>Medical Conditions Aggravated by Exposure:</b>	Eye, skin, and respiratory conditions.		

## EMERGENCY AND FIRST AID PROCEDURES

<b>Eyes:</b>	Flush with plenty of water while holding eyelids apart. Avoid rubbing the eyes as mechanical abrasions can occur. Call a physician if symptoms persist.
<b>Skin:</b>	Wash with soap and water. Launder clothing before reuse.
<b>Inhalation:</b>	Move to fresh air.
<b>Ingestion:</b>	No ill effects expected.
<b>Other:</b>	Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure.

## CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT

<b>Ventilation:</b>	General (natural or mechanically induced fresh air movements).
<b>Eye Protection:</b>	Safety goggles recommended to prevent particulates from irritating the eyes.
<b>Skin Protection:</b>	Cloth gloves and long sleeves to protect skin from irritating fibers.
<b>Respiratory Protection:</b>	Use local exhaust and/or a NIOSH-approved dust respirator when air movement is inadequate to control dusts / fibers below recommended exposure levels.

## PRECAUTIONS FOR SAFE HANDLING AND USE

<b>Handling and Storing Precautions:</b>	Avoid generating dusts. Local exhaust may be required to control dusts if power tools are used for cutting / trimming. Wear appropriate personal protective equipment. Store away from moisture; keep dry.
<b>Spill Procedures:</b>	Not applicable.

## REGULATORY INFORMATION

<b>Hazard Communication:</b>	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
<b>HMIS Codes:</b>	Health 1, Flammability 0, Reactivity 0, PPE B (Gloves, Goggles)
<b>DOT Shipping Name:</b>	Not regulated.
<b>IATA / ICAO Shipping Name:</b>	Not regulated.
<b>TSCA Inventory Status:</b>	Chemical components listed on TSCA inventory.
<b>SARA Title III, Section 313:</b>	This product does not contain any toxic chemicals which are subject to reporting under Section 313 of SARA Title III (40 CFR Part 372).
<b>EPA Waste Code(s):</b>	Not regulated by EPA as a hazardous waste.
<b>Waste Disposal Methods:</b>	Consult with regulatory agencies or your corporate personnel for disposal methods that comply with local, state, and federal safety, health and environmental regulations.

## CONTACTS

<b>Customer Service:</b>	1 800 879 8000	<b>Technical Service:</b>	1 800 879 8000
<b>Health / Safety:</b>	1 800 879 6000	Jerry Metcalf	(x6704)
<b>Emergency # (Chem-Trec):</b>	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)		

The information and recommendations contained herein are based upon data believed to be correct; however, no guarantee or warranty of any kind expressed or implied is made with respect to the information provided.



### MATERIAL SAFETY DATA SHEET

**Product name:** Safety Boosters  
**Description:** 22, 25, and 27 caliber blank cartridges for powder actuated fastening tools  
**Supplier:** Hilti, Inc. P.O. Box 21148, Tulsa, OK 74121; phone 1800 879 8000  
**Emergency # (Chem-Trec.):** 1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

### INGREDIENTS AND EXPOSURE LIMITS

Ingredients:	CAS Number:	TLV:	PEL:	STEL:
Nitroglycerin	00055-63-0	0.46 mg/m <sup>3</sup> (S)	NE	0.1 mg/m <sup>3</sup> (S)
Nitrocellulose	09004-70-0	NE	NE	NE
Lead styphnate	15245-44-0	0.05 mg/m <sup>3</sup> *	0.05 mg/m <sup>3</sup> *	NE
Barium nitrate	10022-31-8	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	NE
Tetracene	00109-27-3	NE	NE	NE

**Abbreviations / Symbols:** \* exposure limit for metallic lead. **NE** = None Established. **NA** = Not Applicable. **(S)** indicates exposure should be controlled for the cutaneous routes including the mucous membranes, eyes, and skin. Airborne exposures as well as direct contact must be considered.

### PHYSICAL DATA

<b>Appearance:</b>	Blank brass cartridges.	<b>Odor:</b>	None.
<b>Vapor Density: (air = 1)</b>	Not applicable.	<b>Vapor Pressure:</b>	Not applicable.
<b>Boiling Point:</b>	Not applicable.	<b>VOC Content:</b>	Not applicable.
<b>Evaporation Rate:</b>	Not applicable.	<b>Solubility in Water:</b>	Not applicable.
<b>Specific Gravity:</b>	Not applicable.	<b>pH:</b>	Not applicable.

### FIRE AND EXPLOSION HAZARD DATA

<b>Flash Point:</b>	Not applicable.	<b>Flammable Limits:</b>	Not applicable.
<b>Extinguishing Media:</b>	Water.		
<b>Special Fire Fighting Procedures:</b>	Flood area with water or keep cartridges cool with water spray.		
<b>Unusual Fire and Explosion Hazards:</b>	Cartridges can blast if exposed to temperatures > 160°C. Mass detonation will not occur.		

### REACTIVITY DATA

<b>Hazardous Polymerization:</b>	Will not occur.	<b>Stability:</b>	Stable.
<b>Incompatibility:</b>	Strong acids and oxidizing agents.		
<b>Decomposition Products:</b>	Oxides of nitrogen, oxides of carbon, acrid fumes and lead oxide.		
<b>Conditions to Avoid:</b>	Acids, excessive heat, crushing, and electrical currents.		

### HEALTH HAZARD DATA

<b>Known Hazards:</b>	OSHA has established an action level of 0.03 mg/m <sup>3</sup> for lead. Exposures that exceed recommended limits for lead may be possible under certain conditions such as excessive firing with little air movement and/or firing in small enclosed work areas. Chronic (long-term) overexposure to lead can result in damage to blood-forming, nervous, urinary and reproductive systems.
<b>Signs and Symptoms of Exposure:</b>	Excessive exposure to gases might cause irritation to the eyes, skin, and respiratory system. Adverse health effects are not expected from acute exposure to fumes and gases; however, adequate ventilation, personal protective equipment, and/or good personal hygiene practices are essential to keep exposure to a minimum.
<b>Routes of Exposure:</b>	Dermal. Inhalation.
<b>Carcinogenicity:</b>	Organic lead compounds are not classified by IARC or NTP as carcinogens. Lead styphnate is converted to metallic lead and lead oxide during combustion. Metallic lead and lead oxide have not been tested adequately. A study by Goyer and Rhyne (1973) concluded that "there is no evidence that lead produces cancer in man".

**Medical Conditions  
Aggravated by Exposure:**

None anticipated.

**EMERGENCY AND FIRST AID PROCEDURES**

<b>Eyes:</b>	If irritation occurs, flush with plenty of water. Consult a physician if symptoms persist.
<b>Skin:</b>	Practice good hygiene; i.e. wash with soap and water after using and before meals.
<b>Inhalation:</b>	Move victim to fresh air. Get medical attention if symptoms persist.
<b>Ingestion:</b>	Get immediate medical attention.
<b>Other:</b>	Seek prompt medical attention if physical injury occurs from pins, rivets, debris, etc. For bleeding wounds, place a clean cloth or similar absorbent material on the wound and apply firm pressure. Elevate the wound and transport immediately to a medical facility.

**CONTROL MEASURES AND PERSONAL PROTECTIVE EQUIPMENT**

<b>Ventilation:</b>	General (i.e., natural or mechanically induced fresh air movements that maintain vapor concentrations below recommended exposure limits).
<b>Eye Protection:</b>	Safety glasses with side-shields, as a minimum. Safety goggles recommended.
<b>Skin Protection:</b>	Cleaning powder actuated tools can result in some exposure to lead compounds. Cloth gloves are recommended, otherwise, wash hands thoroughly when finished and before eating or smoking.
<b>Respiratory Protection:</b>	Not normally required. Where air movement is inadequate to maintain exposure below recommended levels, wear a high efficiency particulate respirator.
<b>Other:</b>	Hearing protection (muffs or aural inserts) should be worn when firing powder actuated tools

**PRECAUTIONS FOR SAFE HANDLING AND USE**

<b>Handling and Storing Precautions:</b>	Store in a cool dry place. Do not crush or drop. Keep away from excessive heat (such as extremely hot surfaces and flames), electrical current, strong acids and oxidizers. NFPA 495 requires 15 feet separation (or 1-hour firewall) from flammable liquids, flammable solids, and oxidizers. For industrial use only. Keep out of reach of children. Use with adequate ventilation. Practice good hygiene; i.e. wash after using and before eating or smoking.
<b>Other Precautions::</b>	Use only in powder actuated tools designed to handle these boosters. Construction industry employees must be properly trained as prescribed by OSHA regulations 29 CFR 1926.302 (e). All employees should be familiar with the safe operating procedures and requirements for powder operated tools as described in ANSI A10.3 and OSHA 29 CFR 1910.243 (d).

**REGULATORY INFORMATION**

<b>Hazard Communication:</b>	This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
<b>HMIS Codes:</b>	Health 1, Flammability 1, Reactivity 3, PPE B (Glasses, Gloves)
<b>DOT Shipping Name:</b>	Consumer commodity, ORM-D
<b>ICAO / IATA Shipping Name:</b>	Cartridges. Power device, Class 1.4S, UN 0323
<b>TSCA Inventory Status:</b>	Chemical components listed on TSCA inventory.
<b>SARA Title III, Section 313:</b>	This product contains < 1% lead styphnate (CAS No. 15245-44-0), < 0.1% barium nitrate (CAS No. 10022-31-8), and 5 - 11% nitroglycerin (CAS No. 55-63-0) which are subject to the reporting according to Section 313 of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.
<b>Waste Disposal Methods:</b>	Misfires should be stored in a closed container until disposal or as otherwise required by local, state, and federal safety, health and environmental regulations. The recommended disposal method is in a burner specifically designed to destroy ammunition.
<b>EPA Waste Code(s):</b>	D008

**CONTACTS**

<b>Customer Service:</b>	1 800 879 8000
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<b>Health / Safety:</b>	1 800 879 6000 Jerry Metcalf (x6704)
<b>Emergency # (Chem-Trec):</b>	1 800 424 9300 (USA, PR, Virgin Islands, Canada); 001 703 527 3887 (other countries)

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MSDS

**Common Name:** MERCURY**Manufacturer:** HONEYWELL**MSDS Revision Date:** 12/13/2001**Grainger Item Number(s):** 1D280, 1KT21, 2E096, 2E515, 3DU24, 3EE80, 4E087, 4E244, 4E879**Manufacturer Model Number(s):** T8034C1085, T822D1024, T834C1137, T87F1859, T87F2873, T87F3467, T87F3855

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HONEYWELL

MATERIAL SAFETY DATA SHEET

HONEYWELL ID#: IL-50-001

BUSINESS UNIT ID#: MS001

## SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION



PART NUMBER: IL50-001

CHEMICAL NAME: MERCURY

PRODUCT USE: GLASS ENCLOSED MERCURY SWITCH.

SYNONYMS/COMMON NAMES: MERCURY (ELEMENTAL), MERCURY ATOMIC, QUICK SILVER.

MANUFACTURER INFORMATION:

SENSING AND CONTROL

HONEYWELL INC.

11 W. SPRING

FREEPORT, IL 61032-4353

PHONE #: 800-707-4555

EMERGENCY #: 800-707-4555

**SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS**

CAS #	COMPONENT	PERCENT
7439-97-6	MERCURY	100

**SECTION 3 - HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW:**

PRODUCT IS SUPPLIED AS A GLASS ENCLOSED MERCURY SWITCH. IF GLASS ENCLOSURE IS DAMAGED, MERCURY LIQUID AND/OR VAPOR MAY BE RELEASED. MERCURY EVAPORATES SLOWLY; SPILLED MERCURY FORMS MANY TINY DROPLETS THAT WILL EVAPORATE FASTER THAN A SINGLE POOL, AND CAN DEVELOP SIGNIFICANT CONCENTRATIONS OF VAPOR IN AN UNVENTILATED AREA. SUCH VAPORS CAN BE POISONOUS, ESPECIALLY IF INHALED OVER EXTENDED PERIODS. MERCURY IS A SILVER COLORED, LIQUID, HEAVY METAL. POISON. MAY BE CORROSIVE TO SOME METALS. MAY BE HARMFUL OR FATAL IF INHALED. MAY BE ABSORBED THROUGH THE SKIN IN HARMFUL AMOUNTS. PROLONGED OR REPEATED EXPOSURE CAN CAUSE DAMAGE TO THE KIDNEY AND THE CENTRAL AND PERIPHERAL NERVOUS SYSTEMS. SYMPTOMS CAN BE PERSISTENT AND/OR THE ONSET MAY BE DELAYED. CONTACT WITH THE EYES AND SKIN MAY CAUSE SLIGHT IRRITATION.

**POTENTIAL HEALTH EFFECTS:**

EYES: LIQUID METALLIC MERCURY IS SLIGHTLY IRRITATING TO THE EYES.

**POTENTIAL HEALTH EFFECTS:****SKIN:**

MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. PROLONGED OR REPEATED EXPOSURE TO METALLIC MERCURY MAY CAUSE SLIGHT IRRITATION AND MAY RESULT IN ALLERGIC SKIN SENSITIZATION. BROKEN OR DAMAGED GLASS ENCLOSURE MAY RESULT IN CUTS OR ABRASIONS.

**POTENTIAL HEALTH EFFECTS:****INGESTION:**

LIQUID METALLIC MERCURY IS POORLY ABSORBED THROUGH FROM THE GASTROINTESTINAL TRACT, AND ACUTE INGESTION HAS BEEN ASSOCIATED WITH POISONING ONLY IN THE PRESENCE OF DECREASED GUT MOTILITY.

**POTENTIAL HEALTH EFFECTS:****INHALATION:**

MERCURY VAPOR IS POISONOUS. MERCURY IS IRRITATING TO THE RESPIRATORY SYSTEM. MAY CAUSE INFLAMMATION OF THE RESPIRATORY TRACT, LUNG LESIONS, AND ACUTE KIDNEY DAMAGE. INHALATION MAY BE FATAL AS A RESULT OF SEVERE PULMONARY IRRITATION. ACUTE MERCURY POISONING CAN INVOLVE SWEATING, IRRITABILITY, INSOMNIA, LETHARGY, TACHYCARDIA, HYPERTENSION, AND SKIN RASH. CHRONIC EXPOSURE CAN CAUSE NEUROBEHAVIORAL/PSYCHOLOGICAL CHANGES.

**HMS RATINGS:**

HEALTH 3\*  
FIRE 0  
REACTIVITY 0

PERS. PROT. SAFETY GLASSES AND IMPERVIOUS GLOVES; (FOR DAMAGED ENCLOSURES OR SPILL CLEAN UP WEAR CHEMICAL GOGGLES AND/OR FACE SHIELD, IMPERVIOUS GLOVES AND PROTECTIVE CLOTHING).

**HAZARD SCALE:**

0 = MINIMAL

1 = SLIGHT  
2 = MODERATE  
3 = SERIOUS  
4 = SEVERE  
\* = CHRONIC HAZARD

#### SECTION 4 - FIRST AID MEASURES



FIRST AID:

EYES:

FLUSH EYES WITH PLENTY OF WATER FOR 15 MINUTES. SEEK IMMEDIATE MEDICAL ATTENTION.

FIRST AID:

SKIN:

FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR 15 MINUTES, AND THEN WASH SKIN THOROUGHLY WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL ATTENTION IF SYMPTOMS DEVELOP OR PERSIST. DISPOSE OF CONTAMINATED CLOTHING.

FIRST AID:

INGESTION:

DO NOT INDUCE VOMITING. SEEK IMMEDIATE MEDICAL ATTENTION. HAVE VICTIM RINSE MOUTH WITH WATER. DILUTE CONTENTS OF STOMACH BY ADMINISTERING 8 OZ. OF WATER. NEVER GIVE ANYTHING BY MOUTH TO A PERSON WHO IS UNCONSCIOUS OR CONVULSING.

FIRST AID:

INHALATION:

REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION, AVOIDING MOUTH-TO-MOUTH CONTACT IF POSSIBLE. SEEK IMMEDIATE MEDICAL ATTENTION.

FIRST AID:

NOTES TO PHYSICIAN:

TREAT SYMPTOMATICALLY.

#### SECTION 5 - FIRE FIGHTING MEASURES



FLASH POINT: NONE

METHOD USED: NOT APPLICABLE

UPPER FLAMMABLE LIMIT (UFL): NOT AVAILABLE

LOWER FLAMMABLE LIMIT (LFL): NOT AVAILABLE

AUTO IGNITION: NOT AVAILABLE

FLAMMABILITY CLASSIFICATION: NOT AVAILABLE

RATE OF BURNING: NOT AVAILABLE

GENERAL FIRE HAZARDS:

NON-COMBUSTIBLE, SUBSTANCE ITSELF DOES NOT BURN. GLASS ENCLOSURE MAY BECOME DAMAGED FROM EXCESSIVE HEAT AND RELEASE MERCURY.

HAZARDOUS COMBUSTION PRODUCTS:

FUMES MAY BE TOXIC AND IRRITATING AND MAY INCLUDE MERCURY VAPORS.

EXTINGUISHING MEDIA: USE ANY MEDIA SUITABLE FOR THE SURROUNDING FIRES.

FIRE FIGHTING EQUIPMENT/INSTRUCTIONS:

FIREFIGHTERS SHOULD WEAR FULL PROTECTIVE CLOTHING INCLUDING SELF CONTAINED

BREATHING APPARATUS. USE WATER SPRAY TO KEEP FIRE-EXPOSED CONTAINERS COOL.  
ISOLATE HAZARD AREA.

NFPA RATINGS:

HEALTH 3  
FIRE 0  
REACTIVITY 0  
OTHER

HAZARD SCALE:

0=MINIMAL  
1=SLIGHT  
2=MODERATE  
3=SERIOUS  
4=SEVERE

## SECTION 6 - ACCIDENTAL RELEASE MEASURES



CONTAINMENT PROCEDURES:

IF MERCURY IS RELEASED, STOP THE FLOW OF MATERIAL AND COLLECT WITH SPILL KIT, ASPIRATION BOTTLE OR APPROVED MERCURY VACUUM, IF THIS IS WITHOUT RISK. WEAR APPROPRIATE PERSONAL PROTECTIVE CLOTHING. DO NOT PERMIT CONTACT WITH SPILLED MATERIAL.

CLEAN-UP PROCEDURES:

PICK UP CONTAINED MATERIAL WITH SPILL KIT. CAREFULLY SWEEP UP BROKEN GLASS ENCLOSURE. DO NOT ALLOW THE SPILLED PRODUCT TO ENTER PUBLIC DRAINAGE SYSTEM OR OPEN WATER COURSES. PUT MATERIAL IN SUITABLE, COVERED, LABELED CONTAINERS.

EVACUATION PROCEDURES: KEEP UNNECESSARY PERSONNEL AWAY. CLOSE OFF AREA.

SPECIAL PROCEDURES:

WEAR ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. AVOID INHALATION OF DUSTS. VENTILATE THE AREA.

## SECTION 7 - HANDLING AND STORAGE



HANDLING PROCEDURES:

HANDLE THIS PRODUCT IN A MANNER TO PREVENT DAMAGE TO THE GLASS ENCLOSURE. DO NOT GET MERCURY OR BROKEN GLASS IN EYES, ON SKIN, OR ON CLOTHING. DO NOT BREATHE FUMES OR VAPORS FROM THIS MATERIAL IF GLASS ENCLOSURE IS DAMAGED OR BROKEN. USE THIS PRODUCT ONLY WITH ADEQUATE VENTILATION. KEEP THIS PRODUCT FROM HEAT. DAMAGED GLASS ENCLOSURES MAY RETAIN PRODUCT RESIDUE AND SHOULD BE CAREFULLY DISCARDED. DISCARD CONTAMINATED CLOTHING. WASH THOROUGHLY AFTER HANDLING.

STORAGE PROCEDURES:

STORE IN A COOL, DRY, WELL-VENTILATED AREA AWAY FROM HEAT. STORE THIS PRODUCT IN A MANNER TO PREVENT DAMAGE TO THE GLASS ENCLOSURE. LIMIT QUANTITY OF MATERIAL IN STORAGE AND RESTRICT ACCESS TO STORAGE AREA. KEEP AWAY FROM FOOD AND DRINKING WATER.

## SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION



EXPOSURE GUIDELINES:

A:

GENERAL PRODUCT INFORMATION:



FOLLOW THE APPLICABLE EXPOSURE LIMITS BELOW. THE OSHA AIR CONTAMINANTS EXPOSURE LIMIT (PEL) IN THE 1989 UPDATE TO 29 CFR 1910.1000 WAS .05 MG/M3. THIS LIMIT WAS VACATED AND MAY NOT BE ENFORCEABLE.

B:  
COMPONENT ANALYSIS:  
MERCURY (CAS # 7439-97-6) CURRENT STANDARDS:

ACGIH TLV:  
INORGANIC FORMS INCLUDING METALLIC MERCURY 0.025 MG/M3 TWA  
AS Hg: SKIN - POTENTIAL FOR SKIN ABSORPTION

OSHA PEL:  
VAPOR, AS Hg:  
CEILING: 0.1 MG/M3  
PREVENT OR REDUCE SKIN ABSORPTION

NIOSH REL: 0.05 MG/M3 TWA SKIN  
POTENTIAL FOR SKIN ABSORPTION

ENGINEERING CONTROLS:  
USE LOCAL EXHAUST AND PROCESS ENCLOSURE TO CONTROL AIRBORNE MISTS AND VAPORS. USE OF A CORROSION-RESISTANT VENTILATION SYSTEM IS RECOMMENDED.

PERSONAL PROTECTIVE EQUIPMENT:  
EYES/FACE:  
SAFETY GLASSES WITH SIDE SHIELDS. FOR HANDLING DAMAGED GLASS ENCLOSURES, OR FOR SPILL CLEAN UP, WEAR CHEMICAL GOGGLES AND/OR FACE SHIELD.

PERSONAL PROTECTIVE EQUIPMENT:  
SKIN:  
WEAR IMPERVIOUS GLOVES. FOR HANDLING DAMAGED GLASS ENCLOSURES OR FOR SPILL CLEAN UP, CLOTHING SHOULD BE WORN TO PREVENT ALL SKIN CONTACT. IT IS SUGGESTED THAT GLOVES BE TESTED FOR SUITABILITY.

PERSONAL PROTECTIVE EQUIPMENT:  
RESPIRATORY:  
IF VENTILATION IS NOT SUFFICIENT TO EFFECTIVELY REMOVE AND PREVENT ACCUMULATION OF AIRBORNE VAPORS, MISTS OR FUMES CONTAINING MERCURY, APPROPRIATE NIOSH/MSHA RESPIRATORY PROTECTION MUST BE PROVIDED.

PERSONAL PROTECTIVE EQUIPMENT:  
GENERAL:  
DO NOT EAT, DRINK OR SMOKE IN WORK AREAS. FOLLOW GOOD HYGIENE AND HOUSEKEEPING PRACTICES.

## SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES



APPEARANCE: GLASS ENCLOSED SWITCH CONTAINING MERCURY

ODOR: NONE

PHYSICAL STATE: GLASS SWITCH WITH LIQUID MERCURY

VAPOR PRESSURE: 0.0012 MMHg @ 20 DEG. C (MERCURY)

FLASH POINT: NONE

BOILING POINT: 356.72 DEG. C (MERCURY)

MELTING POINT: -38.87 DEG. C (MERCURY)

SPECIFIC GRAVITY: 13.5 (WATER = 1) (MERCURY)

VAPOR DENSITY: 7.0 (AIR = 1) (MERCURY)

FREEZING POINT: NOT AVAILABLE

EVAPORATION RATE: 4 (BUTYL ACETATE = 1) (MERCURY)

MOLECULAR WEIGHT: 200.59 (MERCURY)

## SECTION 10 - CHEMICAL STABILITY & REACTIVITY INFORMATION



CHEMICAL STABILITY: NORMALLY STABLE.

CHEMICAL STABILITY:

CONDITIONS TO AVOID: AVOID HEAT AND CONTACT WITH INCOMPATIBLE MATERIALS.

INCOMPATIBILITY:

MERCURY AND MERCURY VAPOR IS INCOMPATIBLE WITH ACETYLENE, ALUMINUM, AMINES, AZIDES, AMMONIA, BORON, DIIDOPHOSPHIDE, BROMINE, 3-BROMOPROPYNE, CALCIUM, CHLORINE, CHLORINE DIOXIDE, COPPER, ETHYLENE OXIDE, LITHIUM, ACIDS, OXIDANTS, POTASSIUM AND SODIUM. MERCURY REACTS WITH MANY METALS, EXCEPT IRON, TO FORM AMALGAMS.

HAZARDOUS DECOMPOSITION: TOXIC MERCURY VAPORS.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

## SECTION 11 - TOXICOLOGICAL INFORMATION



ACUTE TOXICITY:

A:

GENERAL PRODUCT INFORMATION:

AS SUPPLIED, THIS PRODUCT IS NOT HAZARDOUS. HOWEVER, ANY DAMAGE TO THE GLASS ENCLOSURE MAY RELEASE MERCURY LIQUID AND/OR VAPORS WHICH CAN BE EXTREMELY HAZARDOUS. EXPOSURE TO MERCURY CAN CAUSE CONJUNCTIVITIS, CORNEAL DAMAGE, IRRITATION TO THE SKIN, MOUTH, ESOPHAGUS AND STOMACH. OTHER SYMPTOMS CAN INCLUDE IRRITATION OF THE RESPIRATORY TRACT, MUCOUS MEMBRANES, EPISTAXIS, HEADACHE, NAUSEA, AND VOMITING. SYSTEMIC EFFECTS CAN INCLUDE MUSCULAR IRRITABILITY AND KIDNEY DAMAGE. EXPOSURE TO MERCURY CAN RESULT IN ADVERSE EFFECTS IN THE CENTRAL AND PERIPHERAL NERVOUS SYSTEMS. MAY CAUSE METAL FUME FEVER WHICH IS A TRANSIENT FLU-LIKE CONDITION INCLUDING FEVER, SWEATING, ACHES AND PAINS AND DIFFICULTY IN BREATHING. INHALATION MAY BE FATAL AS A RESULT OF SEVERE PULMONARY IRRITATION. ACUTE MERCURY POISONING CAN INVOLVE SWEATING, IRRITABILITY, INSOMNIA, LETHARGY, TACHYCARDIA, HYPERTENSION, AND SKIN RASH. DUE TO THE LONG BIOLOGICAL HALF-LIFE OF MERCURY, SYMPTOMS MAY PERSIST AND ONSET MAY BE DELAYED. IN ACUTE INHALATION ASSAYS, EXPOSURE TO MERCURY VAPOR HAS PRODUCED SEVERE DAMAGE TO THE KIDNEYS, LIVER, BRAIN, HEART, LUNG AND COLON IN EXPERIMENTAL ANIMALS. IN SUBCHRONIC INHALATION STUDIES, MERCURY VAPOR HAS PRODUCED SEVERE DAMAGE TO THE KIDNEY, LUNG AND BRAIN OF EXPERIMENTAL ANIMALS IN SIX WEEKS. MERCURY HAS BEEN REPORTED TO CAUSE SKIN SENSITIVITY IN EXPERIMENTAL ANIMALS.

B:

COMPONENT LD50/LC50: NO INFORMATION IS AVAILABLE.

CARCINOGENICITY:

A:

GENERAL PRODUCT INFORMATION:

NO INFORMATION AVAILABLE. NOT LISTED ON NTP, OSHA OR IARC LISTS OF CARCINOGENS.

B:  
COMPONENT ANALYSIS:

MERCURY (7439-97-6)

ACGIH:  
AS Hg: A4-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN

EPIDEMIOLOGY: NO INFORMATION AVAILABLE.

NEUROTOXICITY:  
EXPOSURE TO MERCURY CAN CAUSE TOXICITY TO THE CENTRAL NERVOUS SYSTEM, CHARACTERIZED BY TREMOR, ATAXIA AND LOSS OF COORDINATION, AND TO THE PERIPHERAL NERVOUS SYSTEM INCLUDING DECREASED STRENGTH, SENSATION AND ABNORMAL REFLEX RESPONSES. OTHER SYMPTOMS INCLUDE DEPRESSION, INSOMNIA, INCREASED IRRITABILITY, PARANOIA, MANIA AND CONTINUED NERVE DEGENERATION EVEN AFTER EXPOSURE HAS CEASED.

MUTAGENICITY:  
MERCURY HAS BEEN REPORTED TO CAUSE MUTATIONS AND/OR DNA DAMAGE IN BACTERIAL AND MAMMALIAN CELL CULTURES. OCCUPATIONAL EXPOSURES TO MERCURY HAVE BEEN ASSOCIATED WITH A SLIGHT INCREASE IN THE NUMBER OF OBSERVED CHROMOSOMAL ABERRATIONS.

TERATOGENICITY:  
MERCURY HAS BEEN REPORTED TO CAUSE REDUCED MALE AND FEMALE FERTILITY, AND BIRTH DEFECTS INCLUDING CENTRAL NERVOUS SYSTEM DEFECTS, CLEFT PALATE AND SKELETAL DEFECTS IN HUMANS, HOWEVER THE INFORMATION SUPPORTING THESE FINDINGS IS LIMITED.

OTHER TOXICOLOGICAL INFORMATION: NONE

## SECTION 12 - ECOLOGICAL INFORMATION



ECOTOXICITY:  
DUE TO THE NATURE OF MERCURY, IT IS EXPECTED TO BE HARMFUL TO AQUATIC LIFE IN LOW CONCENTRATIONS.

FISH:  
LC50 (96 HR) CATFISH, 0.35 MG/L.  
LC50 (96 HR) BLUEGILL SUNFISH, RAINBOW TROUT, SNAKEHEAD FISH, 0.16-0.9 MG/L

INVERTEBRATE:  
LC50 (48 HR) MODIOLUS CARVALHOI (MOLLUSK), 0.5 PPM.  
LC50 (96 HR) MODIOLUS CARVALHOI (MOLLUSK), 0.19 PPM.  
LC50 (96 HR) LYMNAEA ACUMINATA, MAIS COMMUNIS, ILYODRILUS FRANTZI, APLEXA HYPNORUM, 0.023 - 0.36 MG/L

AMPHIBIAN: LC50 (96 HR) RANA HEXADACTYLA (TADPOLE), 0.051 PPM.

ENVIRONMENTAL FATE:

AQUATIC FATE OF MERCURY:  
MERCURY CAN BE DESORBED INTO THE WATER COLUMN, TRANSPORTED BY WATER (PROBABLY BOUND OR CHELATED TO SOME FINE PARTICLES OR DISSOLVED SUBSTANCES) AND REDEPOSITED ON THE BED SEDIMENT. MERCURY BIOACCUMULATES AND CONCENTRATES IN THE FOOD CHAIN. THE MERCURY BIOCONCENTRATION MAY BE AS MUCH AS 10,000 TIMES THAT OF WATER. MERCURY CAN ALSO BE TRANSFORMED INTO METHYLMERCURY IN THE AQUATIC ENVIRONMENT. THIS FORM IS MUCH MORE TOXIC THAN Hg ITSELF.

ATMOSPHERIC FATE OF MERCURY:  
50% OF THE VOLATILE FORM IS MERCURY VAPOR WITH A SIZABLE PORTION OF THE REMAINDER BEING Hg(II) AND METHYL MERCURY. 25 TO 50% OF MERCURY IN WATER IS

ORGANIC. MERCURY IN THE ENVIRONMENT IS DEPOSITED AND REVOLATILIZED MANY TIMES, WITH A RESIDENCE TIME IN THE ATMOSPHERE OF AT LEAST A FEW DAYS. IN THE VOLATILE PHASE IT CAN BE TRANSPORTED HUNDREDS OF KILOMETERS.

## SECTION 13 - DISPOSAL CONSIDERATIONS



US EPA WASTE NUMBER & DESCRIPTIONS:

A:  
GENERAL PRODUCT INFORMATION:  
WASTES MAY REQUIRE AN EPA WASTE CODE FOR CORROSIVITY (D002). MERCURY SHOULD BE SALVAGED FOR PURIFICATION. DO NOT DISCHARGE MERCURY DOWN THE DRAIN.

B:  
COMPONENT ANALYSIS:

MERCURY (7439-97-6)

RCRA:  
WASTE NUMBER U151  
WASTE NUMBER D009  
REGULATORY LEVEL: 0.2 MG/L

DISPOSAL INSTRUCTIONS:  
ALL WASTES MUST BE HANDLED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. WASTE SHOULD BE TESTED USING METHODS DESCRIBED IN 40 CFR PART 261 TO DETERMINE IF IT MEETS APPLICABLE DEFINITIONS OF HAZARDOUS WASTES.

## SECTION 14 - TRANSPORTATION INFORMATION



US DOT INFORMATION:  
MERCURY CONTAINED IN MANUFACTURED ARTICLES ARE NOT REGULATED WHEN THE AMOUNT OF MERCURY PER PACKAGE IS LESS THAN THE REPORTABLE QUANTITY OF ONE POUND, EXCEPT WHEN SHIPPED BY AIR.

WHEN SHIPPED BY AIR, THIS PRODUCT IS FULLY REGULATED, EVEN THOUGH IT MAY CONTAIN ONLY SMALL AMOUNTS OF MERCURY. THE PROPER SHIPPING DESCRIPTION FOR THIS MATERIAL, WHEN SHIPPED BY AIR, IS:  
MERCURY CONTAINED IN MANUFACTURED ARTICLES, 8, UN2809, III.

IF THE SHIPMENT CONTAINS MORE THAN ONE POUND OF MERCURY, (AIR OR GROUND TRANSPORTATION) THEN THE PROPER SHIPPING DESCRIPTION IS:  
RQ, MERCURY CONTAINED IN MANUFACTURED ARTICLES, 8, UN2809, III.

## SECTION 15 - REGULATORY INFORMATION



US FEDERAL REGULATIONS:

A:  
GENERAL PRODUCT INFORMATION: NO ADDITIONAL INFORMATION.

B:  
COMPONENT ANALYSIS: MERCURY (7439-97-6)

SARA 313: FORM R REPORTING REQUIRED FOR 1.0% DE MINIMUS CONCENTRATION

CERCLA:  
FINAL RQ: 1 POUND (0.454 KG)

## STATE REGULATIONS:

A:

GENERAL PRODUCT INFORMATION: NO ADDITIONAL INFORMATION.

B:

COMPONENT INFORMATION:

COMPONENT	CAS #	CA	FL	MA	MN	NJ	PA
MERCURY	7439-97-6	Y	Y	Y	Y	Y	Y

THE FOLLOWING STATEMENT(S) ARE PROVIDED UNDER THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (PROPOSITION 65):

WARNING!

THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE REPRODUCTIVE/DEVELOPMENTAL EFFECTS.

## OTHER REGULATIONS:

A:

GENERAL PRODUCT INFORMATION: NO ADDITIONAL INFORMATION.

B:

COMPONENT INVENTORY STATUS:

COMPONENT	CAS#	TSCA	DSL	EINECS
MERCURY	7439-97-6	YES	YES	YES

C:

COMPONENT INFORMATION (CANADA):

THE FOLLOWING COMPONENTS ARE IDENTIFIED UNDER THE CANADIAN HAZARDOUS PRODUCTS ACT

## INGREDIENT DISCLOSURE LIST:

COMPONENT	CAS #	%	MINIMUM CONCENTRATION
MERCURY	7439-97-6	100	0.1% ITEM 990 (1080)

D:

PRODUCT LABELING:

MANY STATES AND OTHER COUNTRIES HAVE PASSED OR ARE PROPOSING LEGISLATION WHICH REQUIRES LABELING OF MERCURY CONTAINING PRODUCTS. YOU ARE RESPONSIBLE FOR MAKING SURE THESE LABELING REQUIREMENTS ARE FOLLOWED FOR YOUR PRODUCT AND PACKAGING.

**SECTION 16 - OTHER INFORMATION**

THE INFORMATION CONTAINED HEREIN IS BASED UPON CURRENT AVAILABLE SCIENTIFIC INFORMATION AND MANUFACTURERS DATA. THE DESCRIPTIONS CONTAINED HEREIN REPRESENT THE MAJORITY OF USE FOR THIS PRODUCT. ABUSE OR UNFORESEEN CIRCUMSTANCES ARE NOT ADDRESSED. INFORMATION MAY BE DEVELOPED FROM TIME TO TIME WHICH MAY RENDER THE CONCLUSIONS OF THIS REPORT OBSOLETE. HONEYWELL MAKES NO WARRANTIES TO ITS CUSTOMERS, AGENTS EMPLOYEES, OR CONTRACTORS AS TO THE APPLICABILITY OF THIS INFORMATION TO THE USERS INTENDED PURPOSE OR FOR THE CONSEQUENCES FOR ITS USE OR MISUSE. WHILE WE PROVIDE APPLICATION ASSISTANCE, PERSONALLY AND THROUGH OUR LITERATURE AND HONEYWELL WEBSITE, IT IS UP TO THE CUSTOMER TO DETERMINE THE SUITABILITY OF THE PRODUCT IN THE APPLICATION.

MSDS HISTORY:

ISSUE DATE: 11/05/1985

REVISION NO.: 8

REVISION DATE: 12/13/2001

KEY/LEGEND:

EPA = ENVIRONMENTAL PROTECTION AGENCY

TSCA = TOXIC SUBSTANCE CONTROL ACT

ACGIH = AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

IARC = INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

NIOSH = NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

NTP = NATIONAL TOXICOLOGY PROGRAM

OSHA = OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

NFPA = NATIONAL FIRE PROTECTION ASSOCIATION

HMIS = HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

CERCLA = COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT

SARA = SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT

CONTACT: HONEYWELL CUSTOMER OPERATIONS GROUP

CONTACT PHONE: 800-707-4555

FO-44270-H




FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:	1-800-654-6911 (OUTSIDE USA: 1-423-780-2970)
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:	1-800-424-9300 (OUTSIDE USA: 1-703-527-3887)
FOR ALL MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347)

**PRODUCT NAME: HTH® DRY CHLORINE TABLETS**

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Arch Chemicals, Inc.  
501 Merritt 7 PO Box 5204  
Norwalk, CT 06856-5204**

REVISION DATE: 03/16/2009  
SUPERCEDES:  2/28/2008

MSDS Number: 000000002537  
SYNONYMS: None  
CHEMICAL FAMILY: Hypochlorite  
DESCRIPTION / USE: Sanitizer and Oxidizer  
FORMULA: Not Applicable/Mixture

**2. HAZARDS IDENTIFICATION**

OSHA Hazard Classification:	<b>Toxic by inhalation, Corrosive to eyes and skin, Lung toxin, Oxidizer</b>
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Routes of Entry:	Inhalation, skin, eyes, ingestion
Chemical Interactions:	No known or reported interactions.
Medical Conditions Aggravated:	Asthma, respiratory and cardiovascular disease

Human Threshold Response Data

Odor Threshold	Approximately 1.4 mg/m3 (based on odor threshold of chlorine)
Irritation Threshold	Approximately 13-22 mg/m3 (based on irritation threshold of chlorine)

**Hazardous Materials Identification System / National Fire Protection Association Classifications**

<u>Hazard Ratings :</u>	<u>Health</u>	<u>Flammability</u>	<u>Physical / Instability</u>	<u>PPI / Special hazard.</u>
HMIS	3	0	1	
NFPA	3	0	1	OX



Immediate (Acute) Health Effects

Inhalation Toxicity:	HARMFUL IF PRODUCT IS INHALED IN HIGH CONCENTRATIONS. CAUSES BURNS TO RESPIRATORY TRACT. Inhalation of dust or vapor from this product can be irritating to the nose, mouth, throat and lungs. In confined areas, mechanical agitation can result in high levels of dust, and reaction with incompatible materials (as listed in Section 10) can result in high concentrations of chlorine vapor, either of which may result in burns to the respiratory tract, producing lung edema, shortness of breath, wheezing, choking, chest pains, impairment of lung function and possible permanent lung damage.
Skin Toxicity:	DRY MATERIAL CAUSES MODERATE SKIN IRRITATION. WET MATERIAL CAUSES SKIN BURNS. Dermal exposure to dry material causes moderate skin irritation characterized by redness and swelling. Dermal exposure to wet material can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.
Eye Toxicity:	CAUSES BURNS TO EYES. Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage.
Ingestion Toxicity:	MODERATELY TOXIC IF SWALLOWED. CAUSES BURNS TO DIGESTIVE TRACT. Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration or perforation. Significant exposure to this material can lead to serious health effects and/or death.
Acute Target Organ Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract., The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

Prolonged (Chronic) Health Effects

Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.
Reproductive and Developmental Toxicity:	No reproductive or developmental risk to humans is expected from exposure to this product.
Inhalation:	Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.
Skin Contact:	Effects similar to those from acute exposure. In addition, chronic exposure to wet material may cause effects secondary to tissue destruction.
Ingestion:	There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. The acute corrosivity of this product, makes chronic ingestion of significant amounts unlikely.
Sensitization:	This material is not known or reported to be a skin or respiratory sensitizer.
Chronic Target Organ Toxicity:	There are no known or reported effects from repeated exposure except those secondary to burns.
Supplemental Health Hazard Information :	No additional health information available.





### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
CALCIUM HYPOCHLORITE	7778-54-3	60 - 80
SODIUM CHLORIDE	7647-14-5	10 - 20
CALCIUM CHLORATE	10137-74-3	0 - 5
CALCIUM CHLORIDE	10043-52-4	0 - 5
CALCIUM HYDROXIDE	1305-62-0	0 - 6
CALCIUM CARBONATE	471-34-1	0 - 5
Water	7732-18-5	4 - 8.5

### 4. FIRST AID MEASURES

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General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Inhalation:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin Contact:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.



Ingestion: IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Notes to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.

## 5. FIRE FIGHTING MEASURES

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Flammability Summary (OSHA): This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire., This product is a strong oxidizer which is capable of intensifying a fire once started., Product is not known to be flammable, combustible or pyrophoric.

### Flammable Properties

Flash Point: Not applicable  
Autoignition Temperature: Not applicable  
Extinguishing Media: Water only. Do not use dry extinguishers containing ammonium compounds.

Fire Fighting Instructions: Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.

Upper Flammable / Explosive Limit, % in air: Not applicable  
Lower Flammable / Explosive Limit, % in air: Not applicable

## 6. ACCIDENTAL RELEASE MEASURES

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Personal Protection for Emergency Situations: Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air respirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.

### Spill Mitigation Procedures

Air Release: Vapors may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

Water Release: This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.



Land Release: Contact 1-800-654-6911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that may spontaneously ignite any combustible material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. Call for disposal procedures.

Additional Spill Information : Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure. FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

## 7. HANDLING AND STORAGE

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Handling: Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.

Storage: Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

Shelf Life Limitations: Do not store product where the average daily temperature exceeds 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in a cool, dry and well ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extremes of high temperature occur.



Incompatible Materials for Storage: Do not allow product to come in contact with other materials, including e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc. A chemical reaction with such substances can cause a fire of great intensity.

Do Not Store At temperatures Above: Average daily temperature of 35° C / 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.

### Protective Equipment for Routine Use of Product

Respiratory Protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible.

Respirator Type : A NIOSH approved full-face air purifying respirator equipped with combination chlorine/P100 cartridges. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin Protection : Wear impervious gloves to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body. A safety shower should be provided in the immediate work area.

Eye Protection: Use chemical goggles. Emergency eyewash should be provided in the immediate work area.

Protective Clothing Type: Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit)

### Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
CALCIUM HYPOCHLORITE	7778-54-3	ARCH-ROEG*	1 mg/m3 TWA
CALCIUM HYPOCHLORITE	7778-54-3	NIOSH-IDLH	37 - 48 mg/m3 based on IDLH concentration of chlorine
CALCIUM HYDROXIDE	1305-62-0	ZUS_ACGIH	5 mg/m3 TWA



CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAPO	5 mg/m <sup>3</sup> TWA The Final Rule Limit of 5 mg/m <sup>3</sup> is not in effect as a result of reconsideration. Calcium hydroxide is covered by the exposure limits for particulates not otherwise regulated of 5 mg/m <sup>3</sup> respirable dust and 15 mg/m <sup>3</sup> total dust.
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAP1	15 mg/m <sup>3</sup> TWA Total dust
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAP1	5 mg/m <sup>3</sup> TWA respirable dust fraction
CALCIUM CARBONATE	471-34-1	ZUS_OSHAP1	15 mg/m <sup>3</sup> TWA Total dust
CALCIUM CARBONATE	471-34-1	ZUS_OSHAP1	5 mg/m <sup>3</sup> TWA respirable dust fraction

\*ARCH-ROEG: Arch Recommended Occupational Exposure Guideline.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	solid
Form	Tablet
Color:	white
Odor:	Chlorine-like
Molecular Weight:	(Active ingredient)143.00
Specific Gravity :	Not applicable
pH :	10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C)
Boiling Point:	Not applicable
Freezing Point:	Not applicable
Melting Point:	Not applicable
Density:	1.9g/cc
Vapor Pressure:	(@ 25 Deg. C) Not applicable
Vapor Density:	Not applicable
Viscosity:	Not applicable
Fat Solubility:	No data
Solubility in Water:	18 % Product also contains calcium hydroxide and calcium carbonate which will leave a residue.
Partition coefficient n-octanol/water:	Not applicable
Evaporation Rate:	Not applicable
Oxidizing:	Oxidizer
Volatiles, % by vol.:	Not applicable
VOC Content	Not applicable
HAP Content	Not applicable



## 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an NFPA Class 3 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product.
Conditions to Avoid:	Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 95 °F. Prevent ingress of humidity and moisture into container or package. Always close the lid.
Chemical Incompatibility:	This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive, flammable or combustible materials. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.
Hazardous Decomposition Products:	Chlorine
Decomposition Temperature:	170 - 180 DEG°C - , 338 - 356 DEG°F-

## 11. TOXICOLOGICAL INFORMATION

### Component Animal Toxicology

#### Oral LD50 value:

CALCIUM HYPOCHLORITE	LD50 (65% calcium hypochlorite)	850 mg/kg	Rat
SODIUM CHLORIDE	LD50 =	3,000 mg/kg	Rat
CALCIUM CHLORIDE	LD50 =	1,000 mg/kg	Rat
CALCIUM HYDROXIDE	LD50 =	7,340 mg/kg	Rat

#### Dermal LD50 value:

CALCIUM HYPOCHLORITE	LD50 (65% calcium hypochlorite)	> 2,000 mg/kg	Rabbit
SODIUM CHLORIDE	LD50 >	10,000 mg/kg	Rabbit
CALCIUM CHLORIDE	LD50 =	2,630 mg/kg	Rat
CALCIUM HYDROXIDE	No data		

#### Inhalation LC50 value:

CALCIUM	Inhalation LC50 1 h (65% calcium hypochlorite), (Nose Only) =	2.04 MG/L	Rat
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HYPOCHLORITE  
CALCIUM HYPOCHLORITE Inhalation LC50 4 h (65% calcium hypochlorite), (Nose Only) = 0.51 MG/L Rat  
HYPOCHLORITE  
SODIUM CHLORIDE Inhalation LC50 1 h > 42 MG/L Rat  
CALCIUM CHLORIDE No data  
CALCIUM HYDROXIDE No data

Product Animal Toxicity

Oral LD50 value: LD50 Approximately 800 mg/kg Rat  
Dermal LD50 value: LD50 > 2,000 mg/kg Rabbit  
Inhalation LC50 value: Inhalation LC50 1.00 h (Nose Only) Believed to be > 2.04 MG/L Rat  
Inhalation LC50 4 h (Nose Only) Believed to be > 0.51 MG/L Rat  
Skin Irritation: DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS.  
Eye Irritation: Corrosive to eyes.  
Skin Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

**CALCIUM HYPOCHLORITE**

Acute Toxicity: This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. The dry material is irritating to the skin. However when wet, it will produce burns to the skin.  
Subchronic / Chronic Toxicity: There are no known or reported effects from repeated exposure except those secondary to burns.  
Reproductive and Developmental Toxicity: Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.

**CALCIUM CHLORIDE**

Not known or reported to cause reproductive or developmental toxicity.

Mutagenicity: Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.

**CALCIUM CHLORIDE**

This product was determined to be non-mutagenic in the Ames assay. It was also shown to be non-clastogenic in the chromosomal aberration test.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium



hypochlorite. Histopathological examination failed to show an increased incidence of tumors. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans (Group 3 Substance).

CALCIUM CHLORIDE

This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

## 12. ECOLOGICAL INFORMATION

Overview: Highly toxic to fish and other aquatic organisms.

### Ecological Toxicity Values for: CALCIUM HYPOCHLORITE

Bluegill	-	(nominal, static). 96 h LC50	0.088 mg/l
Rainbow trout ( <i>Salmo gairdneri</i> ),	-	(nominal, static). 96 h LC50	0.16 mg/l
Daphnia magna,	-	(nominal, static). 48 h LC50	0.11 mg/l
Bobwhite quail	-	Dietary LC50	> 5,000 ppm
Mallard ducklings	-	Dietary LC50	> 5,000 ppm
Bobwhite quail	-	Oral LD50	3,474 mg/kg

### Ecological Toxicity Values for: CALCIUM CHLORIDE

Bluegill	-	(nominal, static). 96 h LC50 =	10,650 mg/l
Mosquito fish	-	(nominal, static). 96 h LC50 =	13,400 mg/l
Fathead minnow ( <i>Pimephales promelas</i> ),	-	(nominal, static). 96 h LC50 =	4,630 mg/l
Daphnia magna,	-	(nominal, static). 48 h LC50=	2,770 mg/l
Ceriodaphnia dubia	-	(nominal, static). 48 h LC50=	1,830 mg/l
Nitzschia linearis (diatom)	-	(nominal, static). 5 day LC50 =	3,130 mg/l

## 13. DISPOSAL CONSIDERATIONS

**CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.**

Waste Disposal Summary : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001. If this product becomes a





waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly.

Disposal Methods : As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : D001

## 14. TRANSPORT INFORMATION

Land (US DOT): UN1748 CALCIUM HYPOCHLORITE, DRY MIXTURE 5.1 III  
Water (IMDG): UN1748 CALCIUM HYPOCHLORITE, DRY MIXTURE, 5.1 III

Flash Point: Not applicable  
Air (IATA): UN1748 CALCIUM HYPOCHLORITE, DRY MIXTURE, 5.1 III  
Emergency Response Guide Number: ERG # 140

Transportation Notes: Under specific circumstances, this product can ship under two transport exceptions, Limited Quantity or Consumer Commodity. See Bill of Lading for proper shipping description. REPORTABLE QUANTITY: 10 lbs. (Per 49 CFR 172.101, Appendix)

EMS: F-H, S-Q

## 15. REGULATORY INFORMATION

### UNITED STATES:

Toxic Substances Control Act (TSCA): The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.

EPA Pesticide Registration Number: None established

FIFRA Listing of Pesticide Chemicals (40 CFR 180): This product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

### Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311 / 312 (40 CFR 370.2):  
Health Immediate (Acute) Health Hazard  
Physical Fire Hazard

### Emergency Planning & Community Right to Know (40 CFR 355, App. A):

### Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:

ZUS\_SAR302 TPQ (threshold planning quantity) None established

### Reportable Quantity (49 CFR 172.101, Appendix):



ZUS\_CERCLA Reportable quantity      CALCIUM HYPOCHLORITE  
Value: 10lbs

ZUS\_SAR302 Reportable quantity      None established

**Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components**

ZUS\_SAR313 De minimis concentration      None established

**Clean Air Act Toxic ARP Section 112r:**

CAA 112R      None established

**Clean Air Act Socmi:**

HON SOC      None established

**Clean Air Act VOC Section 111:**

CAA 111      None established

**Clean Air Act Haz. Air Pollutants Section 112:**

ZUS\_CAAHAP      None established

ZUS\_CAAHRP      None established

CAA AP      None established

**State Right-to-Know Regulations Status of Ingredients**

**Pennsylvania:**

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSPA\_RTK

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323

1990-01-01  
CHLORIC ACID, CALCIUM SALT  
hazardous substance

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323

1990-01-01  
CALCIUM HYDROXIDE (CA(OH)2)  
hazardous substance

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323

1990-01-01  
HYPOCHLOROUS ACID, CALCIUM SALT



environmental hazard, hazardous substance

**New Jersey:**

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSNJ\_RTK

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]

1989-12-01  
CALCIUM CHLORATE  
hazardous substance

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]

1989-12-01  
CALCIUM HYDROXIDE  
hazardous substance

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]

1989-12-01  
CALCIUM HYPOCHLORITE  
special health hazard substance, special health hazard, reactive - second degree

**Massachusetts:**

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSMA\_RTK

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know law,The Massachusetts Substance List, 105 CMR 670.000

1991-07-01  
CALCIUM CHLORATE  
massachusetts hazardous substance

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know law,The Massachusetts Substance List, 105 CMR 670.000

1991-07-01  
CALCIUM HYDROXIDE  
massachusetts hazardous substance

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know law,The Massachusetts Substance List, 105 CMR 670.000

1991-07-01



CALCIUM HYPOCHLORITE  
massachusetts hazardous substance

**California Proposition 65:**

CAS #	COMPONENT NAME
ZUSCA_P65	None established

**WHMIS Hazard Classification:**

Canada. Canada Hazardous Products Act SOR/88-64  
1988-01-20  
Concentration by Weight: 1 percent by weight  
302  
CALCIUM HYDROXIDE

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**16. OTHER INFORMATION**

MSDS REVISION STATUS : Revised to meet the ANSI standard of 16 sections  
Major References : Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .



**Arch  
Chemicals,  
Inc.**

**MATERIAL SAFETY  
DATA SHEET**

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL:	1-800-654-6911 (OUTSIDE USA: 1-423-780-2970)
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®:	1-800-424-9300 (OUTSIDE USA: 1-703-527-3887)
FOR ALL MSDS QUESTIONS & REQUESTS, CALL:	1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347)

**PRODUCT NAME: HTH® DRY CHLORINE GRANULAR**

EPA Registration Number: 1258-1069

**1. PRODUCT AND COMPANY IDENTIFICATION**

<b>Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204</b>	REVISION DATE:	02/28/2008
	SUPERCEDES:	06/10/2005
	MSDS Number:	000000001187
	SYNONYMS:	None
	CHEMICAL FAMILY:	Hypochlorite
	DESCRIPTION / USE:	Sanitizer and Oxidizer
	FORMULA:	Not Applicable/Mixture

**2. HAZARDS IDENTIFICATION**

OSHA Hazard Classification:	<b>Toxic by inhalation., Corrosive to eyes and skin, Lung toxin, Oxidizer</b>
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Routes of Entry:	Inhalation, skin, eyes, ingestion
Chemical Interactions:	No known or reported interactions.
Medical Conditions Aggravated:	Asthma, respiratory and cardiovascular disease

Human Threshold Response Data

Odor Threshold	Approximately 1.4 mg/m3 (based on odor threshold of chlorine)
Irritation Threshold	Approximately 13-22 mg/m3 (based on irritation threshold of chlorine)

**Hazardous Materials Identification System / National Fire Protection Association Classifications**

<u>Hazard Ratings :</u>	<u>Health</u>	<u>Flammability</u>	<u>Physical / Instability</u>	<u>PPI / Special hazard.</u>
HMIS	3	0	1	
NFPA	3	0	1	OX



Immediate (Acute) Health Effects

Inhalation Toxicity:	HARMFUL IF PRODUCT IS INHALED IN HIGH CONCENTRATIONS. CAUSES BURNS TO RESPIRATORY TRACT. Inhalation of dust or vapor from this product can be irritating to the nose, mouth, throat and lungs. In confined areas, mechanical agitation can result in high levels of dust, and reaction with incompatible materials (as listed in Section 10) can result in high concentrations of chlorine vapor, either of which may result in burns to the respiratory tract, producing lung edema, shortness of breath, wheezing, choking, chest pains, impairment of lung function and possible permanent lung damage.
Skin Toxicity:	DRY MATERIAL CAUSES MODERATE SKIN IRRITATION. WET MATERIAL CAUSES SKIN BURNS. Dermal exposure to dry material causes moderate skin irritation characterized by redness and swelling. Dermal exposure to wet material can cause severe irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.
Eye Toxicity:	CAUSES BURNS TO EYES. Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage.
Ingestion Toxicity:	MODERATELY TOXIC IF SWALLOWED. CAUSES BURNS TO DIGESTIVE TRACT. Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding, and/or tissue ulceration or perforation. Significant exposure to this material can lead to serious health effects and/or death.
Acute Target Organ Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract., The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

Prolonged (Chronic) Health Effects

Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA.
Reproductive and Developmental Toxicity:	No reproductive or developmental risk to humans is expected from exposure to this product.
Inhalation:	Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.
Skin Contact:	Effects similar to those from acute exposure. In addition, chronic exposure to wet material may cause effects secondary to tissue destruction.
Ingestion:	There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure. The acute corrosivity of this product, makes chronic ingestion of significant amounts unlikely.
Sensitization:	This material is not known or reported to be a skin or respiratory sensitizer.
Chronic Target Organ Toxicity:	There are no known or reported effects from repeated exposure except those secondary to burns.
Supplemental Health Hazard Information :	No additional health information available.



### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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<u>CAS OR CHEMICAL NAME</u>	<u>CAS #</u>	<u>% RANGE</u>
CALCIUM HYPOCHLORITE	7778-54-3	60 - 80
SODIUM CHLORIDE	7647-14-5	10 - 20
CALCIUM CHLORATE	10137-74-3	0 - 5
CALCIUM CHLORIDE	10043-52-4	0 - 5
CALCIUM HYDROXIDE	1305-62-0	0 - 4
CALCIUM CARBONATE	471-34-1	0 - 5
Water	7732-18-5	5.5 - 10

### 4. FIRST AID MEASURES

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General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Inhalation:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin Contact:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Ingestion:	IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Notes to Physician:	Probable mucosal damage may contraindicate the use of gastric lavage.



## 5. FIRE FIGHTING MEASURES

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Flammability Summary (OSHA): This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire., This product is a strong oxidizer which is capable of intensifying a fire once started., Product is not known to be flammable, combustible or pyrophoric.

### Flammable Properties

Flash Point: Not applicable  
Autoignition Temperature: Not applicable  
Extinguishing Media: Water only. Do not use dry extinguishers containing ammonium compounds.  
Fire Fighting Instructions: Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.  
Upper Flammable / Explosive Limit, % in air: Not applicable  
Lower Flammable / Explosive Limit, % in air: Not applicable

## 6. ACCIDENTAL RELEASE MEASURES

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Personal Protection for Emergency Situations: Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air respirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.

### Spill Mitigation Procedures

Air Release: Vapors may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

Water Release: This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.

Land Release: Contact 1-800-654-6911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that may spontaneously ignite any combustible material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. Call for disposal procedures.





Additional Spill Information :

Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure. FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

## 7. HANDLING AND STORAGE

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- Handling:** Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.
- Storage:** Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.
- Shelf Life Limitations:** Do not store product where the average daily temperature exceeds 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in a cool, dry and well ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extremes of high temperature occur.
- Incompatible Materials for Storage:** Do not allow product to come in contact with other materials, including e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc. A chemical reaction with such substances can cause a fire of great intensity.
- Do Not Store At temperatures Above:** Average daily temperature of 35° C / 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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- Ventilation:** Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.



Protective Equipment for Routine Use of Product

Respiratory Protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible.

Respirator Type : A NIOSH approved full-face air purifying respirator equipped with combination chlorine/P100 cartridges. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin Protection : Wear impervious gloves to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body. A safety shower should be provided in the immediate work area.

Eye Protection: Use chemical goggles. Emergency eyewash should be provided in the immediate work area.

Protective Clothing Type: Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit)

Exposure Limit Data

<u>CHEMICAL NAME</u>	<u>CAS #</u>	<u>Name of Limit</u>	<u>Exposure</u>
CALCIUM HYPOCHLORITE	7778-54-3	ARCH-ROEG*	1 mg/m3 TWA
CALCIUM HYPOCHLORITE	7778-54-3	NIOSH-IDLH	37 - 48 mg/m3 based on IDLH concentration of chlorine
CALCIUM HYDROXIDE	1305-62-0	ZUS_ACGIH	5 mg/m3 TWA
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAPO	5 mg/m3 TWA
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAP1	15 mg/m3 TWA Total dust
CALCIUM HYDROXIDE	1305-62-0	ZUS_OSHAP1	5 mg/m3 TWA respirable dust fraction
CALCIUM CARBONATE	471-34-1	ZUS_ACGIH	10 mg/m3 TWA
CALCIUM CARBONATE	471-34-1	ZUS_OSHAP1	15 mg/m3 TWA Total dust
CALCIUM CARBONATE	471-34-1	ZUS_OSHAP1	5 mg/m3 TWA respirable dust fraction

\*ARCH-ROEG: Arch Recommended Occupational Exposure Guideline.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical State: solid

Form: Free flowing, powder

Color: white

Odor: Chlorine-like

Molecular Weight: (Active ingredient)143.00

Specific Gravity : Not applicable

pH : 10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C)

Boiling Point: Not applicable

Freezing Point: Not applicable

Melting Point: Not applicable



Density: 0.8g/cc  
Vapor Pressure: (@ 25 Deg. C) Not applicable  
Vapor Density: Not applicable  
Viscosity: Not applicable  
Fat Solubility: No data  
Solubility in Water: 18 % (@ 25 Deg. C) Product also contains calcium hydroxide and calcium carbonate which will leave a residue.

Partition coefficient n-octanol/water: No data  
Evaporation Rate: Not applicable  
Oxidizing: Oxidizer  
Volatiles, % by vol.: Not applicable  
VOC Content: Not applicable  
HAP Content: Not applicable

## 10. STABILITY AND REACTIVITY

**Stability and Reactivity Summary:** Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an NFPA Class 3 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product.

**Conditions to Avoid:** Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 95 °F. Prevent ingress of humidity and moisture into container or package. Always close the lid.

**Chemical Incompatibility:** This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive, flammable or combustible materials. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.

**Hazardous Decomposition Products:** Chlorine  
**Decomposition Temperature:** 170 - 180 DEG°C - , 338 - 356 DEG°F-

## 11. TOXICOLOGICAL INFORMATION

### Component Animal Toxicology

Oral LD50 value:

CALCIUM LD50 (65% calcium hypochlorite) 850 mg/kg Rat  
HYPOCHLORITE



SODIUM CHLORIDE	LD50 = 3,000 mg/kg	Rat
CALCIUM CHLORIDE	LD50 = 1,000 mg/kg	Rat
CALCIUM HYDROXIDE	LD50 = 7,340 mg/kg	Rat

Dermal LD50 value:

CALCIUM HYPOCHLORITE	LD50 (65% calcium hypochlorite)	> 2,000 mg/kg	Rabbit
SODIUM CHLORIDE	LD50	> 10,000 mg/kg	Rabbit
CALCIUM CHLORIDE	LD50	= 2,630 mg/kg	Rat
CALCIUM HYDROXIDE		No data	

Inhalation LC50 value:

CALCIUM HYPOCHLORITE	Inhalation LC50 1 h (65% calcium hypochlorite), (Nose Only)	= 2.04 MG/L	Rat
CALCIUM HYPOCHLORITE	Inhalation LC50 4 h (65% calcium hypochlorite), (Nose Only)	= 0.51 MG/L	Rat
SODIUM CHLORIDE	Inhalation LC50 1 h	> 42 MG/L	Rat
CALCIUM CHLORIDE		No data	
CALCIUM HYDROXIDE		No data	

Product Animal Toxicity

<u>Oral LD50 value:</u>	LD50	Approximately 800 mg/kg	Rat
<u>Dermal LD50 value:</u>	LD50	> 2,000 mg/kg	Rabbit
<u>Inhalation LC50 value:</u>	Inhalation LC50 1.00 h (Nose Only)	> 2.04 MG/L	Rat
	Inhalation LC50 4 h (Nose Only)	> 0.51 MG/L	Rat
Skin Irritation:	DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS.		
Eye Irritation:	Corrosive to eyes.		
Skin Sensitization:	This material is not known or reported to be a skin or respiratory sensitizer.		
Acute Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. The dry material is irritating to the skin. However when wet, it will produce burns to the skin.		
Subchronic / Chronic Toxicity:	There are no known or reported effects from repeated exposure except those secondary to burns.		

Reproductive and Developmental Toxicity:	Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.
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CALCIUM CHLORIDE	Not known or reported to cause reproductive or developmental toxicity.
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Mutagenicity:	Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.
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CALCIUM CHLORIDE	This product was determined to be non-mutagenic in the Ames assay. It was also shown to be non-
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clastogenic in the chromosomal aberration test.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumors. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans (Group 3 Substance).

CALCIUM CHLORIDE

This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

## 12. ECOLOGICAL INFORMATION

Overview: Highly toxic to fish and other aquatic organisms.

### Ecological Toxicity Values for: **CALCIUM HYPOCHLORITE**

	Bluegill	- (nominal, static). 96 h LC50 0.088 mg/l
Rainbow trout ( <i>Salmo gairdneri</i> ),		- (nominal, static). 96 h LC50 0.16 mg/l
	Daphnia magna,	- (nominal, static). 48 h LC50 0.11 mg/l
	Bobwhite quail	- Dietary LC50 > 5,000 ppm
Mallard ducklings		- Dietary LC50 > 5,000 ppm
Bobwhite quail		- Oral LD50 3,474 mg/kg

### Ecological Toxicity Values for: **CALCIUM CHLORIDE**

	Bluegill	- (nominal, static). 96 h LC50 = 10,650 mg/l
Mosquito fish		- (nominal, static). 96 h LC50 = 13,400 mg/l
Fathead minnow ( <i>Pimephales promelas</i> ),		- (nominal, static). 96 h LC50 = 4,630 mg/l
	Daphnia magna,	- (nominal, static). 48 h LC50= 2,770 mg/l
Ceriodaphnia dubia		- (nominal, static). 48 h LC50= 1,830 mg/l
	Nitzschia linearis (diatom)	- (nominal, static). 5 day LC50 = 3,130 mg/l

## 13. DISPOSAL CONSIDERATIONS

**CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.**

Waste Disposal Summary : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following



EPA hazardous waste number: D001. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly.

Disposal Methods : As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : D001

## 14. TRANSPORT INFORMATION

Land (US DOT): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE 5.1 II  
Water (IMDG): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 II

Flash Point: Not applicable  
Air (IATA): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 II  
Emergency Response Guide Number: ERG # 140

Transportation Notes: Under specific circumstances, this product can ship under two transport exceptions, Limited Quantity or Consumer Commodity. See Bill of Lading for proper shipping description. REPORTABLE QUANTITY: 10 lbs. (Per 49 CFR 172.101, Appendix)

EMS: F-H, S-Q

## 15. REGULATORY INFORMATION

### UNITED STATES:

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.  
EPA Pesticide Registration Number: 1258-1069

FIFRA Listing of Pesticide Chemicals (40 CFR 180): This product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

### Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311 / 312 (40 CFR 370.2):  
Health Immediate (Acute) Health Hazard  
Physical Fire Hazard

### Emergency Planning & Community Right to Know (40 CFR 355, App. A):

#### Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:

ZUS\_SAR302 TPQ (threshold planning quantity) None established

#### Reportable Quantity (49 CFR 172.101, Appendix):

ZUS\_CERCLA Reportable quantity CALCIUM HYPOCHLORITE  
Value: 10lbs



ZUS\_SAR302 Reportable quantity None established

**Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components**

ZUS\_SAR313 De minimis concentration None established

**Clean Air Act Toxic ARP Section 112r:**

CAA 112R None established

**Clean Air Act Socmi:**

HON SOC None established

**Clean Air Act VOC Section 111:**

CAA 111 None established

**Clean Air Act Haz. Air Pollutants Section 112:**

ZUS\_CAAHAP None established

ZUS\_CAAHRP None established

CAA AP None established

**State Right-to-Know Regulations Status of Ingredients**

**Pennsylvania:**

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSPA\_RTK

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323  
1990-01-01  
CHLORIC ACID, CALCIUM SALT  
hazardous substance

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323  
1990-01-01  
CALCIUM HYDROXIDE (CA(OH)2)  
hazardous substance

US. Commonwealth of Pennsylvania - Department of Labor and Industry; Pennsylvania Code Title 34, Labor and Industry Chapter 323  
1990-01-01  
HYPOCHLOROUS ACID, CALCIUM SALT  
environmental hazard, hazardous substance

**New Jersey:**

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE



1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSNJ\_RTK

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]  
1989-12-01  
CALCIUM CHLORATE  
hazardous substance

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]  
1989-12-01  
CALCIUM HYDROXIDE  
hazardous substance

US. New Jersey Department of Environmental Protection -; Bureau of Hazardous Substances New Jersey Right to Know Law, Hazardous Substance List [P.L. 1983, C. 315, NJSA 34:5A-1 et seq]  
1989-12-01  
CALCIUM HYPOCHLORITE  
special health hazard substance, special health hazard, reactive - second degree

**Massachusetts:**

CAS #	COMPONENT NAME
10137-74-3	CALCIUM CHLORATE
1305-62-0	CALCIUM HYDROXIDE
7778-54-3	CALCIUM HYPOCHLORITE

ZUSMA\_RTK

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know law, The Massachusetts Substance List, 105 CMR 670.000  
1991-07-01  
CALCIUM CHLORATE  
massachusetts hazardous substance

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know law, The Massachusetts Substance List, 105 CMR 670.000  
1991-07-01  
CALCIUM HYDROXIDE  
massachusetts hazardous substance

US. The Commonwealth of Massachusetts Department of Public Health; Massachusetts Right-to-know law, The Massachusetts Substance List, 105 CMR 670.000  
1991-07-01  
CALCIUM HYPOCHLORITE  
massachusetts hazardous substance

**California Proposition 65:**

CAS #	COMPONENT NAME
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ZUSCA\_P65

None established

**WHMIS Hazard Classification:**

HTH® DRY CHLORINE GRANULAR  
REVISION DATE : 02/28/2008





Canada. Canada Hazardous Products Act SOR/88-64  
1988-01-20

Concentration by Weight: 1 percent by weight  
302

CALCIUM HYDROXIDE

## 16. OTHER INFORMATION

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MSDS REVISION STATUS : Revised to meet the ANSI standard of 16 sections  
SECTIONS REVISED: 7, 10, 14  
Major References : Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .



Septic

# MATERIAL SAFETY DATA SHEET

6 October, 1997

IN-SINK-ERATOR DIVISION  
4700 21ST STREET  
RACINE, WI. 53406  
PHONE: 1-888-527-1493

FOR EMERGENCY CALL: 1-888-527-1493

## SECTION 1 NAME & HAZARD SUMMARY

MATERIAL NAME: BIO - CHARGE  
CODE: 9427

## SECTION 2 HAZARDOUS INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>PERCENT</u>	<u>TLV (ACGIH)</u>
PEO (6) TRIDECYL ALCOHOL	783330-21-9	1-3%	NA
VIALE BACTERIAL CULTURES (Largely Water)	NA 7732-18-5	GT 90%	NA NA

INGREDIENTS NOT PRECISELY IDENTIFIED ARE PROPRIETARY OR NON-HAZARDOUS. ALL CHEMICAL INGREDIENTS APPEAR ON THE EPA TSCA INVENTORY. VALUES ARE NOT PRODUCT SPECIFICATIONS.

GT = GREATER THAN      NA = NOT AVAILABLE      LT = LESS THAN

## SECTION 3 PHYSICAL DATA

BOILING POINT: 100 C  
VAPOR PRESSURE (mmHg at 20 C): EQUIV. TO WATER  
VAPOR DENSITY (AIR = 1): EQUIV. TO WATER  
SOLUBILITY IN WATER: 99%  
pH: 7.5 - 9.0  
SPECIFIC GRAVITY: APPROX. 1.0  
APPEARANCE & ODOR: LIGHT TO MEDIUM BLUE LIQUID WITH SLIGHT ODOR  
HMIS RATE (0 - 4): HEALTH = 1, FIRE = 0, REACTIVITY = 0

## SECTION 4 FIRE & EXPLOSION HAZARD DATA

FLASH POINT (AND METHOD): NA  
AUTO IGNITION TEMPERATURE: NA  
FLAMMABLE LIMITS (STP): NA

EXTINGUISHING MEDIA: WATER SPRAY, CARBON DIOXIDE, DRY CHEMICAL POWDER.

SPECIAL FIRE FIGHTING PROTECTIVE EQUIPMENT: NONE

UNUSUAL FIRE & EXPLOSION HAZARDS: NA

**SECTION 5 REACTIVITY DATA**

STABILITY: STABLE UNDER NORMAL CONDITIONS.

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ACIDS OR ALKALI COMPOUNDS MAY INACTIVATE BIOLOGICAL CULTURES.

HAZARDOUS DECOMPOSITION PRODUCTS: NONE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

**SECTION 6 HEALTH HAZARD ASSESSMENT**

GENERAL: LIMITED TOXICITY DATA ARE AVAILABLE ON THIS SPECIFIC PRODUCT.

INGESTION: NO EFFECT IF INGESTED IN SMALL AMOUNTS. RELATIVE TO OTHER MATERIALS, A SINGLE DOSE OF THIS PRODUCT IS RARELY TOXIC BY INGESTION. IRRITATION OF THE MOUTH, PHARYNX, ESOPHAGUS AND STOMACH CAN DEVELOP FOLLOWING INGESTION.

EYE CONTACT: THIS MATERIAL MAY CAUSE EYE IRRITATION. ORGANISMS USED ARE NON-PATHOGENIC BUT CAN CAUSE INFECTION WHEN IN CONTACT WITH OPEN WOUNDS. THESE ORGANISMS ARE SUSCEPTIBLE TO MANY COMMONLY-USED ANTIBIOTICS.

SKIN CONTACT: SLIGHT REDNESS ON HANDS AND FOREARMS IF INDIVIDUAL HAS A HISTORY OF DERMAL ALLERGIC REACTION. DERMATITIS AND SKIN SENSITIZATION CAN DEVELOP AFTER REPEATED AND/OR PROLONGED CONTACT WITH HUMAN SKIN.

SKIN ABSORPTION: SYSTEMATICALLY TOXIC CONCENTRATIONS WILL PROBABLY NOT BE ABSORBED THROUGH THE SKIN IN MAN.

INHALATION: NONE KNOWN.

OTHER EFFECTS OF OVER EXPOSURE: NONE KNOWN

FIRST AID PROCEDURES: SKIN: REMOVE CONTAMINATED CLOTHING AND FOOTWEAR. WASH MATERIAL OFF THE SKIN WITH PLENTY OF SOAP AND WATER. WASH CLOTHING AND FOOTWEAR BEFORE REUSE.

EYES: IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MINUTES AND HAVE EYES EXAMINED AND TREATED BY MEDICAL PERSONNEL.

INGESTION: CALL POISON CONTROL CENTER.

**SECTION 7****SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE  
MATERIAL IS RELEASED OR SPILLED:

FOR SMALL SPILLS, USE CHEMICAL ABSORBENT AND SWEEP UP. FOR LARGE SPILLS CONTAIN AND COLLECT.

DISPOSAL METHOD:

DISPOSAL OF THIS PRODUCT OR ITS RESIDUES MUST BE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.

**SECTION 8****SPECIAL PROTECTION INFORMATION**

TLV OR SUGGESTED CONTROL  
VALUE:

NO TLV ASSIGNED TO THIS MIXTURE. CONTROL OF EXPOSURE TO BELOW THE TLV FOR THE INGREDIENTS (SEE SECTION 2) WILL BE SUFFICIENT. MINIMIZE EXPOSURE IN THE ACCORDANCE WITH GOOD HYGIENE PRACTICE. TO MAINTAIN SHELF LIFE, AVOID PROLONGED EXPOSURE TO HIGH OR LOW TEMPERATURES AND HUMIDITY. AVOID TEMPS ABOVE 110 F AND KEEP FROM FREEZING.

VENTILATION:

NORMAL ROOM VENTILATION

RESPIRATORY PROTECTION  
(SPECIFY TYPE)

NONE REQUIRED FOR RECOMMENDED USE. AVOID CREATING AEROSOLS IN POORLY VENTILATED AREAS.

PROTECTIVE CLOTHING:

NONE REQUIRED

EYE PROTECTION:

SAFETY GLASSES, CHEMICAL GOGGLES, OR FACE SHIELD

OTHER PROTECTIVE EQUIPMENT:

NA

**SECTION 9****SPECIAL PRECAUTIONS OR OTHER COMMENTS**

PRECAUTIONS TO BE TAKEN IN  
HANDLING OR STORING:

PREVENT SKIN AND EYE CONTACT. WASH HANDS THOROUGHLY WITH SOAP AND WATER AFTER USE. AVOID CONTACT WITH EYES.

THE DATA AND RECOMMENDATIONS PRESENTED HEREIN ARE BASED UPON RESEARCH OF OTHERS AND ARE BELIEVED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THESE DATA OR THE RESULTS TO BE OBTAINED FROM USE THEREOF. IN-SINK-ERATOR, ASSUMES NO RESPONSIBILITY FOR THE INJURY TO CUSTOMERS OR THIRD PERSONS PROXIMATELY CAUSED BY THE MATERIAL IF REASONABLE SAFETY PROCEDURES ARE NOT ADHERED TO AS STIPULATED IN THE DATA SHEET. ADDITIONALLY, SINCE ACTUAL USE BY OTHERS IS BEYOND OUR CONTROL, NO GUARANTEE, EXPRESSED OR IMPLIED, IS MADE BY IN-SINK-ERATOR, AS TO THE EFFECT OF SUCH USE, THE RESULTS TO BE OBTAINED OR THE SAFETY AND TOXICITY OF THE PRODUCT NOR DOES IN-SINK-ERATOR, ASSUME ANY LIABILITY ARISING OUT OF THE USE, MISUSE, BY OTHERS OF THE PRODUCT HEREIN. INFORMATION PROVIDED HEREIN IS PROVIDED BY IN-SINK-ERATOR SOLELY FOR CUSTOMER ASSISTANCE IN COMPLYING WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND REGULATIONS THEREUNDER. ANY OTHER USE IS PROHIBITED.

# Material Safety Data Sheet

## AP Armaflex Insulation

Prepared 8/00 – Replaces 6/99

Armacell LLC  
P.O. Box 1038  
7600 Oakwood Street Extension  
Mebane, NC 27302  
(919) 304-3846

### I. PRODUCT IDENTIFICATION

Name: AP Armaflex Products: including AP Armaflex Tube, AP Armaflex SS Tube, AP Armaflex Sheet and Rolls, AP Armaflex SA Sheet and Rolls, AP Armaflex Tape, AP Armaflex W, and HD Armaflex Sheet.

Description: Expanded, closed-cell, sulfur-cured rubber type compound.  
Available in various sizes and in several forms; e.g., pipe insulation, sheet insulation and insulating tape.

### II. DEPARTMENT OF TRANSPORTATION INFORMATION

Shipping name: Not classified. Hazard Class: N/A ID # N/A

### III. HMIS (0 = minimal hazard; 4 = severe hazard)

Health = 0 Flammability = 1 Reactivity = 0

### IV. PRODUCT CONTENT

This product is classified as an "article" according to Title 29 of the Code of Federal Regulations, OSHA Part 1910.1200©. They are formed to a specific shape or design during manufacture, has end use functions dependent upon their shape and design, and does release any hazardous chemical under normal conditions of use. This product does NOT contain asbestos or polychlorinated biphenyls.

### V. HAZARDOUS INGREDIENTS

<u>(Chemical Identity; Common Name)</u>	<u>C.A.S. No.</u>	<u>%</u>	<u>OSHA PEL</u>	<u>ACGIH TVL</u>
None				

### VI. PHYSICAL DATA

APPEARANCE AND COLOR: Black, dark gray or white. BOILING POINT (°F): N/A. VAPOR PRESSURE (mm Hg @ 20°C): N/A. VAPOR DENSITY (Air = 1): N/A. SOLUBILITY IN WATER: N/A. SPECIFIC GRAVITY (H<sub>2</sub>O=1): N/A. PERCENT VOLATILE BY WEIGHT (30 min. @275°F): N/A. EVAPORATION RATE (Butyl Acetate=1) : N/A. pH: N/A VOC: N/A.

when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

N/A -not applicable or not available  
N/K – none known or not known

### VII. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A. RANGE: LEL = N/A. UEL = N/A. EXTINGUISHING MEDIA: Water. SPECIAL FIRE FIGHTING PROCEDURES: Protect fire fighters from toxic products of combustion by wearing self-contained breathing apparatus. UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

### VIII. HEALTH HAZARD DATA

PRIMARY ROUTE (S) OF ENTRY: N/A. TARGET ORGANS: N/A. EFFECTS OF OVEREXPOSURE: SKIN AND EYES: N/A. INHALATION: N/A. CARCINOGENICITY : NTP. No IARC Monographs: No OSHA Regulated: No. MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE N/A. FIRST AID PROCEDURES: SKIN AND EYES: N/A. INHALATION N/A. INGESTION N/A.

### IX. REACTIVITY DATA

STABILITY N/A. INCOMPATIBILITY : N/A. HAZARDOUS DECOMPOSITION PRODUCTS: N/A. HAZARDOUS POLYMERIZATION : N/A.

### X. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED N/A. WASTE DISPOSAL METHOD: Dispose of container and any unused contents in accordance with Federal, State and Local Waste Disposal Regulations

### XI. SPECIAL HANDLING AND USE INFORMATION

VENTILATION : N/A. RESPIRATORY PROTECTION N/A. SKIN AND EYE PROTECTION : N/A.

### XII. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE N/A. OTHER PRECAUTIONS: N/A. WORK SITE ENVIRONMENT: N/A.

The information presented herein is supplied as a guide to those who handle or use this product. Safe work practices must be employed







# MATERIAL SAFETY DATA SHEET

## Section 1: Product and Company Information

**Product Name(s):** Kraft Faced Fiberglass Insulation, Foil Faced Fiberglass Insulation, FSK Foil Insulation, Blowing Wool

**Manufacturer:** Western Fiberglass Corporation, 6955 Union Park Center, Suite 580, Midvale, UT 84047

Owens-Corning, , World headquarters One Owens-Corning Parkway  
Attn. Product Stewardship, Toledo, OH, 43659,  
Telephone: 1-419-248-8234 (8am-5pm ET weekdays).

**Emergency Contacts:**

Emergencies ONLY (after 5pm ET and weekends): 1-419-248-5330,  
CHEMTREC (24 hours everyday): 1-800-424-9300,  
CANUTEC (Canada - 24 hours everyday): 1-613-996-6666.

**Health and Technical Contacts:**

Health Issues Information (8am-5pm ET): 1-419-248-8234,  
Technical Product Information (8am-5pm ET): 1-800-GET-PINK.

## Section 2: Product and Company Information

<u>Common Name</u>	<u>Chemical Name</u>	<u>CAS No.</u>	<u>Wt. %</u>
Fiber Glass Wool	Fibrous Glass	65997-17-3	85-96
Cured Binder	Urea, polymer of phenol & formaldehyde	25104-55-6	4-15
Formaldehyde (trace)	Formaldehyde	50-00-0	<0.1

**Note:** See Section 8 of MSDS for exposure limit data for these ingredients.



## MATERIAL SAFETY DATA SHEET

### Section 3: Hazards Identification

**Appearance and Odor:** White, yellow or tan fibrous material with faint resin odor. Some products have a vinyl, brown paper, foil, or polypropylene facing.

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#### Emergency Overview

Fire may cause hydrogen chloride to be released from vinyl faced products.

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**Primary Route(s) of Exposure:** inhalation, skin, eye

#### **Potential Health Effects:**

**ACUTE (short term):** Fiber glass wool is a mechanical irritant and may cause temporary irritation of the respiratory tract, skin and eyes. See Section 8 for exposure controls.

**CHRONIC (long term):** Fiber glass wool is a possible cancer hazard. Use of these products has not been shown to cause cancer in humans. Fiber glass wool caused cancer in animals through unnatural routes of exposure (surgical implantation), but has not produced significant cancer by inhalation. See Section 11 of MSDS for additional toxicological data.

**Medical Conditions Aggravated by Exposure:** Chronic respiratory or skin conditions may temporarily worsen from exposure to these products.



## MATERIAL SAFETY DATA SHEET

### Section 4: First Aid Measures

**Inhalation:** Move person to fresh air. Administer cardiac or pulmonary resuscitation (CPR) if a pulse is not detectable or if unable to breathe. Provide oxygen if breathing is difficult. Obtain immediate medical assistance if irritation persists.

**Eye Contact:** Flush eyes with running water for at least 15 minutes. Seek medical attention if irritation persists.

**Skin Contact:** Wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid further irritation, do not rub or scratch irritated areas. Rubbing or scratching may force fibers into skin. Seek medical attention if irritation persists.

**Ingestion:** Ingestion of this material is unlikely. If it does occur, observe individual for several days to ensure that intestinal blockage does not occur.

### Section 5: Fire Fighting Measures

**Flash Point and Method (°F):** None.

**Flammability Limits (%):** None.

**Auto Ignition Temperature (°F):** Not Applicable.

**Extinguishing Media:** Water, foam, CO<sub>2</sub> or dry chemical.

**Unusual Fire and Explosion Hazards:** Vinyl faced products will release hydrogen chloride in a fire. Evacuate building immediately if this occurs.

**Fire Fighting Instructions:** Use self contained breathing apparatus (SCBA) in a sustained fire.

**Hazardous Combustion Products:** Primary combustion products are carbon monoxide, carbon dioxide, ammonia and water. Other undetermined compounds could be released in small quantities.



## MATERIAL SAFETY DATA SHEET

### Section 6: Accidental Release Measures

**Land Spill:** Scoop up or vacuum material and put into suitable container for disposal as a non-hazardous waste.

**Water Spill:** This material will sink and disperse along the bottom of waterways and ponds. It can not easily be removed after it is waterborne, however, the material is non-hazardous in water.

**Air Release:** This material will settle out of the air. It can then be scooped up or vacuumed for disposal as a non-hazardous waste.

### Section 7: Handling and Storage

**Storage Temperature:** Not applicable.

**Storage Pressure:** Not applicable.

**General:** No special storage or handling procedures are required for this material.

### Section 8: Exposure Controls and Personal Protection

<u>Ingredient</u>	<u>OSHA PEL</u> (8-hr TWA)	<u>ACGIH TLV</u> (8-hr TWA)
Fibrous glass	5 mg/m <sup>3</sup> (respirable dust) 15 mg/m <sup>3</sup> (total dust) (proposed) 1 fiber/cc (dust)	10 mg/m <sup>3</sup>
Cured Binder	None Established	None Established
Formaldehyde	0.75 ppm TWA 2 ppm STEL	0.3 ppm ceiling



## MATERIAL SAFETY DATA SHEET

### Personal Protection:

**Respiratory Protection:** 3M Model 8210 (or 8710) (3M Model 9900 in high humidity environments) or equivalent under the following conditions: 1) installing loosefill, 2) in any poorly ventilated space, 3) fabrication involving power tools, 4) any dusty environment.

**Skin Protection:** Loose fitting long sleeved shirt, long pants and gloves.

**Eye Protection:** Safety glasses, goggles or face shield.

**Engineering Controls:** General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits. Dust collection systems should be used in operations involving cutting or machining and may be required in operations using power tools.

### **Section 9: Physical and Chemical Properties**

**Vapor Pressure (mm Hg @ 20°C):** Not Applicable

**pH:** Not Applicable

**Vapor Density (Air=1):** Not Applicable

**Specific Gravity (Water=1):** Not Applicable

**Boiling Point:** Not Applicable

**Solubility in Water:** Insoluble

**Viscosity:** Not Applicable

**Appearance:** Fibrous

**Physical State:** Solid

**Odor Type:** Organic

**Freezing Point:** Not Applicable

**Evaporation Rate (n-Butyl Acetate=1):** Not Applicable



# MATERIAL SAFETY DATA SHEET

## Section 10: Stability and Reactivity

**General:** Stable

**Incompatible Materials and Conditions to Avoid:** None

**Hazardous Decomposition Products:** None, except in fire. See Section 5 of MSDS for combustion products statement.

**Hazardous Polymerization:** Will not occur.

## Section 11: Toxicological Information

**CARCINOGENICITY:** The table below indicates whether or not each agency has listed each ingredient as a carcinogen:

<u>Ingredient</u>	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>
Formaldehyde	Yes	Yes	Yes	Yes
Fiber Glass Wool	No	Yes	Yes	No
Cured Resin	No	No	No	No
	<u>LD<sub>50</sub> Oral</u> (mg/kg)	<u>LD<sub>50</sub> Dermal</u> (mg/kg)	<u>LC<sub>50</sub> Inhalation</u> (ppm, 4 hrs.)	
Fiber Glass Wool	Not Available	Not Available	Not Available	
Formaldehyde	500-800 (rat)	270 (rabbit)	250-478 (rat)	
Cured Resin	Not Available	Not Available	Not Available	



## MATERIAL SAFETY DATA SHEET

**Formaldehyde:** In March 1987 the International Agency for Research on Cancer (IARC) upgraded their evaluation of formaldehyde gas, based on evidence of carcinogenicity in humans, from inadequate (Group 2B) to limited (Group 2A). A number of new epidemiological studies on persons in a variety of occupations with potential exposure to formaldehyde were used in the evaluation. Cancers that occurred in excess in more than one study are: Hodgkin's disease, leukemia, and cancers of the buccal cavity and pharynx (particularly nasopharynx), lung, nose, prostate, bladder, brain, colon, skin and kidney.

Exposure to formaldehyde at concentrations in excess of 1 ppm may cause significant irritation of the eyes and upper respiratory tract. The irritation threshold appears to be about 0.3 ppm. No pulmonary sensitization has been demonstrated in laboratory studies. Formaldehyde solutions can cause severe eye and moderate skin irritation. Repeated skin exposure to solutions of 2% or more formaldehyde has caused allergic skin reactions. Formaldehyde was found to be weakly active in a number of *in vitro* genotoxicity tests, but inactive *in vivo*. Formaldehyde did not cause birth defects in rats inhaling concentrations up to 10 ppm. Lifetime inhalation of formaldehyde at concentrations above 5 ppm for 6 hours per day, caused nasal tumors in laboratory animals. Many epidemiological studies have failed to link cancer in humans with occupational exposure to formaldehyde.

**Fiber Glass Wool:** The International Agency for Research on Cancer (IARC) in June, 1987, classified fiber glass wool as possible cancer causing agent to humans (Group 2B). This classification was based on a combined evaluation of published human and animal studies. The human data included large scale mortality studies of U.S. and European fiber glass wool factory workers. IARC concluded that the human studies did not provide sufficient evidence that fiber glass wool caused cancer in humans. The classification of fiber glass wool as a possible carcinogen to humans was substantially based on experimental animal studies in which they were exposed to wool glass fibers through non-natural routes, such as injection or implantation. IARC regards it prudent to treat a material with sufficient evidence of carcinogenicity in animals as if it is a possible carcinogen in humans.

Animal inhalation experiments in which laboratory animals were exposed to large quantities of glass fibers have not resulted in a positive association between glass fibers and lung cancer. A small study of Canadian glass wool workers reported a statistically significant increase in lung cancer mortality. The study did not demonstrate a correlation between fiber glass wool exposure and disease. Large scale studies published in 1987 which examined the mortality rates of U.S. and European fiber glass wool factory workers found no statistically significant differences in lung cancer rates between those workers and the populations in their local or regional communities. A 1990 update of the U.S. cohort reported a small



## MATERIAL SAFETY DATA SHEET

statistically significant excess for respiratory cancer in workers when compared with populations in their local communities. While the overall mortality rates in these mortality studies were slightly raised and did increase (but not significantly) with time since the first exposure, the increases were not related to duration of exposure or to an estimated time weighted measure of exposure. Georgetown University recently studied the oldest and largest fiber glass plant in the U.S. The results indicate that smoking was the likely cause of this cancer excess. A study at the University of Massachusetts is investigating other possible factors.

Georgetown University also reported elevated odds ratios for non-malignant respiratory disease which are deemed by the author to be inconclusive but warranting further investigation. A large recently completed morbidity study reported no association with fiber glass exposure and non-malignant respiratory disease. Another smaller screening of workers at a plant that manufactured appliances concluded that fiber glass wool appeared to produce "asbestosis" in the workers. That study has been severely criticized for many reasons, not the least of which is its failure to factor in the workers exposures to asbestos.

### Section 12: Ecological Information

This material is not toxic to animals, plants or fish.

### Section 13: Disposal Considerations

**RCRA Hazard Class:** Non-hazardous.







## MATERIAL SAFETY DATA SHEET

### Transportation of Dangerous Goods - Canada

**Proper Shipping Name:** Not Regulated

**TDG Hazard Classification:** (Primary): None (Secondary): None

**IMO Classification:** None

**ICAO/IATA Classification:** None

**Product Identification Number:** None

**Packing Group:** None

**Control Temperature:** None

**Emergency Temperature:** None

**Schedule XII Quantity Restriction:** None

**Reportable Quantity for US Shipments:** None

**IATA Packing Instructions:**

**Passenger/Cargo:** None

**Cargo Only:** None

**Limited Quantity:** None

**Maximum Net Quantity per Package:**

**Passenger/Cargo:** None

**Cargo Only:** None

**Limited Quantity:** None

**Special Provisions:** None



# MATERIAL SAFETY DATA SHEET

## Section 15: Regulatory Information

**TSCA Status:** Each ingredient is on the Inventory.

**NSR Status (Canada):** Each ingredient is on the DSL.

**SARA Title III:**

**Hazard Categories:**

Acute Health: Yes  
Chronic Health: Yes  
Fire Hazard: No  
Pressure Hazard: No  
Reactivity Hazard: No

**Reportable Ingredients:**

Sec. 302/304: None  
Sec. 313: None

**WHMIS (Canada):** Status: Controlled

**WHMIS Classifications:** D2A - Carcinogenicity

**California Proposition 65:** Fiber glass wool (respirable size) and formaldehyde are regulated as carcinogens.

## Section 16: Other Information

**HMIS and NFPA Hazard Rating:**

**Category**

**HMIS**

**NFPA**

Acute Health  
Flammability  
Reactivity

1  
0  
0

2  
2 (facing, packaging)  
0

**NFPA Unusual Hazards:** None.

**HMIS Personal Protection:** To be supplied by user depending upon use.

**Revision Summary:** This MSDS is a revision to the MSDS dated April 30, 1997. The logo for Western Fiberglass replaced the OC logo in the header. (Reformatted 11/25/98)



# MATERIAL SAFETY DATA SHEET

## MANUFACTURER INFORMATION

MANUFACTURER NAME & ADDRESS

K-Flex USA, LLC  
100 Nomaco Drive  
Youngsville, NC 27596

MSDS INFORMATION: 800-765-6475

DATE ISSUED: January 2008

## 1.0 IDENTIFICATION

CHEMICAL NAME: NBR/PVC ELASTOMERIC FOAM

CAS NO. N/A

TRADE NAME: Insul-Tube®, Insul-Lock®, Insul-Sheet® S2S, Insul-Tube® White, K-FLEX™ LS, K-FLEX™ LS Self Seal, K-FLEX™ LS Sheet S2S, K-FLEX™ LS White, FlexTherm®, FlexTherm® Seam Seal, FlexTherm® Sheet S2S, FlexTherm® White; Nomaco K-Flex Gray Duct Liner; Elastomeric Tape

## 2.0 SPECIAL REGULATORY HAZARDS

HAZARDOUS INGREDIENT

CAS NO.

EXPOSURE LIMIT

NONE

N/A

N/A

THIS MATERIAL IS CLASSIFIED AS AN Article under CFR 1910.1200C.

## 3.0 PHYSICAL DATA

APPEARANCE AND ODOR: Sheet Material; Black, Gray or Natural in Color; Negligible to no odor.

SOLUBILITY: Insoluble

MELTING POINT (°C): N/A

VAPOR PRESSURE @ 20°C: 0.1

BOILING POINT (°C): N/A

VAPOR DENSITY (AIR = 1): N/A

SPECIFIC GRAVITY (H<sub>2</sub>O=1): N/A

OTHER: N/A

## 4.0 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A

AUTOIGNITION TEMP: N/A

EXTINGUISHING MEDIA: Water, CO<sub>2</sub>, Dry Chemical, Foam  
N/A

FLAMMABLE LIMITS: N/A (LEL):

UNUSUAL HAZARDS: N/A

(UEL): N/A

SPECIAL FIRE FIGHTING PROCEDURES:

Recommend NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing be worn.

## 5.0 REACTIVITY DATA

STABILITY:  Stable  Unstable

INCOMPATIBILITY: N/A

DECOMPOSITION PRODUCTS: Upon combustion, HCl, HCN and other hazardous gases may be evolved.

toll free 800 765-6475

on the web [www.kflexusa.com](http://www.kflexusa.com)



**K-FLEX USA**

Elastomeric Insulation Products

## 6.0 SPECIAL PROTECTION INFORMATION

**Engineering Controls:** Local exhaust ventilation is recommended for control of airborne dust, fumes and vapors in confined areas.

**PERSONAL PROTECTION EQUIPMENT:** Recommend light to medium duty cloth or leather gloves and approved safety glasses.

## 7.0 STORAGE SPILLS AND DISPOSAL INFORMATION

**Storage:** Avoid storage in confined areas where temperatures may exceed 51°C (125°F).

**Spills:** N/A

**Disposal:** Not a RCRA hazardous waste. Dispose of in accordance with local, state and federal regulations.

## 8.0 HEALTH RELATED DATA

Ingestion	<b>Acute Health Hazard:</b> Unlikely route of exposure <b>Chronic Health Hazard:</b> N/E <b>Emergency &amp; First Aid Procedures:</b> No adverse affects anticipated by this route of exposure
Skin	<b>Acute Health Hazard:</b> N/E <b>Chronic Health Hazard:</b> N/E <b>Emergency &amp; First Aid Procedures:</b> If rash or irritation develops, wash with soap and water. If rash or irritation persists, consult a physician.
Eye	<b>Acute Health Hazard:</b> Small particles may cause irritation. <b>Chronic Health Hazard:</b> N/E <b>Emergency &amp; First Aid Procedures:</b> Flush with water. If irritation persists, consult a physician.
Inhalation	<b>Acute Health Hazard:</b> Unlikely route of exposure <b>Chronic Health Hazard:</b> N/E <b>Emergency &amp; First Aid Procedures:</b> N/E

**Carcinogenicity:** NTP?  Yes  No    **IARC?**  Yes  No    **OSHA?**  Yes  No

**Medical Conditions Aggravated by Exposure:** N/E  
**CODES USED:** N/A = NOT APPLICABLE    N/E = NOT ESTABLISHED

The information and recommendations contained herein are based upon data that is accurate and reliable, to the best of K-Flex USA, LLC knowledge and belief. With respect to information and recommendations, K-Flex USA, LLC. makes no representations or warranties of any kind or nature, express or implied.

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Elastomeric Insulation Products

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.

### SECTION I

<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248	Transportation Emergencies: CHEMTREC: (800) 424-9300 or 3 E COMPANY (800) 451-8346 Medical Emergencies: 3 E COMPANY (24 Hour No.) (800) 451-8346 Business: (310) 898-3300
<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for PVC Plastic Pipe Mixture of PVC Resin and Organic Solvents	<b>TRADE NAME:</b> WELD-ON HOT R' COLD 727 for PVC Plastic Pipe <b>FORMULA:</b> Proprietary

### SECTION II - HAZARDOUS INGREDIENTS

None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA	CAS#	APPROX %	ACGIH-TLV	ACGIH-STEL	OSHA-PEL	OSHA-STEL	DUPONT	
							(A) AEL	(B) STEL
Polyvinyl Chloride Resin (PVC)	NON/HAZ		N/A		N/A			
Tetrahydrofuran (THF)**	109-99-9	29 - 44	200 PPM	250 PPM	200 PPM	250 PPM	25 PPM	75 PPM
Methyl Ethyl Ketone (MEK)	78-93-3	4 -15*	200 PPM	300 PPM	200 PPM	300 PPM		
Cyclohexanone	108-94-1	8 - 17	25 PPM Skin		25 PPM Skin			
Acetone	67-64-1	1-11	750 PPM	1000 PPM	750 PPM	1000 PPM		

All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

(A) Dupont's Acceptable Exposure Limit (AEL) for 8 hour and 12 hour TWA, (B) Dupont's recommended STEL for 15 minute TWA.  
 \*\*Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.

<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b> DOT Shipping Name: Adhesive DOT Hazard Class: 3 Identification Number: UN 1133 Packaging Group: II Label Required: Flammable Liquid	<b>SPECIAL HAZARD DESIGNATIONS</b> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">HMIS</th> <th style="text-align: center;">NFPA</th> <th style="text-align: center;">HAZARD RATING</th> </tr> </thead> <tbody> <tr> <td>HEALTH:</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">0 - MINIMAL</td> </tr> <tr> <td>FLAMMABILITY:</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td style="text-align: center;">1 - SLIGHT</td> </tr> <tr> <td>REACTIVITY:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2 - MODERATE</td> </tr> <tr> <td>PROTECTIVE EQUIPMENT:</td> <td style="text-align: center;">H</td> <td></td> <td style="text-align: center;">3 - SERIOUS 4 - SEVERE</td> </tr> </tbody> </table>		HMIS	NFPA	HAZARD RATING	HEALTH:	2	2	0 - MINIMAL	FLAMMABILITY:	3	3	1 - SLIGHT	REACTIVITY:	0	1	2 - MODERATE	PROTECTIVE EQUIPMENT:	H		3 - SERIOUS 4 - SEVERE
	HMIS	NFPA	HAZARD RATING																		
HEALTH:	2	2	0 - MINIMAL																		
FLAMMABILITY:	3	3	1 - SLIGHT																		
REACTIVITY:	0	1	2 - MODERATE																		
PROTECTIVE EQUIPMENT:	H		3 - SERIOUS 4 - SEVERE																		
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b> DOT Shipping Name: Consumer Commodity DOT Hazard Class: ORM-D	H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron																				

### SECTION III - PHYSICAL DATA

<b>APPEARANCE</b> Clear, medium syrupy liquid	<b>ODOR</b> Ethereal	<b>BOILING POINT (°F/°C)</b> 151°F (67°C) Based on first boiling component: THF
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.968 ± 0.040	<b>VAPOR PRESSURE (mm Hg.)</b> 143 mm Hg. based on first boiling component, THF @ 68°F (20°C)	<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 80 - 90 %
<b>VAPOR DENSITY (Air = 1)</b> 2.49	<b>EVAPORATION RATE (BUAC = 1)</b> >1.0	<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.

VOC STATEMENT: VOC as manufactured: 850 Grams/Liter (g/l). Maximum VOC emission when applied & tested per SCAQMD Rule 1168, Test Method 316A: 600 g/l.

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

<b>FLASH POINT</b> -4°F (-20°C) T.C.C. Based on THF	<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)	<b>LEL</b> 2	<b>UEL</b> 11.8
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.			
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure hose masks or airline masks. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.			
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back.			

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES  
OF ENTRY:

Inhalation    
  Skin Contact    
  Eye Contact    
  Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
Skin Contact: Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
Skin Absorption: Prolonged or widespread exposure may result in the absorption of harmful amounts of material.  
Eye Contact: Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.  
Ingestion: Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.

#### CHRONIC:

Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days. Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation: If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.  
Eye Contact: Flush eyes with plenty of water for 15 minutes and call a physician.  
Skin Contact: Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.  
Ingestion: Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Keep away from heat, sparks, open flame and other sources of ignition.

#### INCOMPATIBILITY

(MATERIALS TO AVOID) Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

#### HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code (CA): 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits set forth in Section II. Use only explosion proof ventilation equipment.

PROTECTIVE GLOVES PVA coated rubber gloves for frequent dipping/immersion. Use of latex/nitrile surgical gloves or solvent resistant barrier creme should provide adequate protection when normal solvent-cementing practices and procedures are used for solvent welding of plastic sheet/pipe joints.	EYE PROTECTION Splashproof chemical goggles, face shield, safety glasses with brow guards and side shields, etc. as appropriate for exposure.
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### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 110°F (5°C - 43.7°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



IPS WELD-ON		<b>MATERIAL SAFETY DATA SHEET</b>				Date Revised: NOV 2007 Supersedes: APR 2007		
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.								
SECTION I - PRODUCT INFORMATION								
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248					Transportation Emergencies: CHEMTREC: (800) 424-9300 Medical Emergencies: 3 E COMPANY (24 Hour No.) (800) 451-8346 Business: (310) 898-3300			
<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for PVC Plastic Pipe Mixture of PVC Resin and Organic Solvents					<b>TRADE NAME:</b> WELD-ON WET 'N FAST 735 for PVC Plastic Pipe <b>FORMULA:</b> Proprietary			
SECTION II - HAZARDOUS INGREDIENTS, EXPOSURE LIMITS, & TRANSPORT DATA								
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA								
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>	<b>LD50</b>	<b>LC50</b>
Polyvinyl Chloride Resin (PVC)	NON/HAZ		N/A		N/A		N. AP.	N. AP.
Tetrahydrofuran (THF)**	109-99-9	40 - 70	50 PPM Skin#	100 PPM	200 PPM	250 PPM	Oral: 2880 mg/kg (rat)	Inhalation 3 hrs. 21,000 PPM (rat)
Methyl Ethyl Ketone (MEK)	78-93-3	4 - 15*	200 PPM	300 PPM	200 PPM	300 PPM	Oral: 3.98 g/kg (rat)	Inhalation 4 hrs. Dermal: 8-10 mg/kg (rabbit) 4000 PPM (rat)
Acetone	67-64-1	18 - 28	500 PPM	750 PPM	750 PPM	1000 PPM	Oral: 9.75 g/kg (rat)	Inhalation LCLO Dermal: 20 g/kg (rabbit) 4 hrs: 16,000 PPM (rat)
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.								
# Invista and BASF mfg's Acceptable Exposure Limit (AEL) for 8 hour and 12 hour TWA, Invista/BASF recommended STEL for 15 minute TWA.: 75 PPM.								
**Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.								
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>				<b>SPECIAL HAZARD DESIGNATIONS</b>				
DOT Shipping Name: Adhesive				<b>HMIS</b>				
DOT Hazard Class: 3				<b>NFPA</b>				
Identification Number: UN 1133				<b>HAZARD RATING</b>				
Packaging Group: II				HEALTH: 2 2 0 - MINIMAL				
Label Required: Flammable Liquid				FLAMMABILITY: 3 3 1 - SLIGHT				
				REACTIVITY: 0 1 2 - MODERATE				
				PROTECTIVE EQUIPMENT: 3 - SERIOUS				
				EQUIPMENT: B - H 4 - SEVERE				
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>				B = Eye, Hand/Skin (for normal solvent-welding activities)				
DOT Shipping Name: Consumer Commodity				H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron (splash/immersion risks)				
DOT Hazard Class: ORM-D								
SECTION III - PHYSICAL DATA								
<b>APPEARANCE</b> Blue, medium syrupy liquid		<b>ODOR</b> Ethereal		<b>BOILING POINT (°F/°C)</b> 133°F (57°C) Based on first boiling component: Acetone				
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.92 ± 0.040		<b>VAPOR PRESSURE (mm Hg.)</b> 190 mm Hg. based on first boiling component, Acetone @ 68°F (20°C)		<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 85 - 90 %				
<b>VAPOR DENSITY (Air = 1)</b> 2.0		<b>EVAPORATION RATE (BUAC = 1)</b> >1.0		<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.				
VOC STATEMENT: VOC as manufactured: 765 Grams/Liter (g/l). Maximum VOC emission when applied & tested per SCAQMD Rule 1168, Test Method 316A: 600 g/l.								
SECTION IV - FIRE AND EXPLOSION HAZARD DATA								
<b>FLASH POINT</b> -6°F (-21°C) T.C.C. Based on Acetone				<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)		<b>LEL</b>	<b>UEL</b>	
						2.1	13.0	
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.								
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure hose masks or airline masks. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.								
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back.								

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY:	X	Inhalation	X	Skin Contact		Eye Contact		Ingestion
<b>EFFECT OF OVEREXPOSURE</b>								
<b>ACUTE:</b>								
<u>Inhalation:</u>	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.							
<u>Skin Contact:</u>	Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.							
<u>Skin Absorption:</u>	Prolonged or widespread exposure may result in the absorption of harmful amounts of material.							
<u>Eye Contact:</u>	Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.							
<u>Ingestion:</u>	Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.							
<b>CHRONIC:</b>	Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days. Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.							

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

<b>EMERGENCY AND FIRST AID PROCEDURES</b>	
<u>Inhalation:</u>	If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.
<u>Eye Contact:</u>	Flush eyes with plenty of water for 15 minutes and call a physician.
<u>Skin Contact:</u>	Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.
<u>Ingestion:</u>	Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE			CONDITIONS TO AVOID
	STABLE	X		Keep away from heat, sparks, open flame and other sources of ignition.

**INCOMPATIBILITY (MATERIALS TO AVOID)** Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

**HAZARDOUS DECOMPOSITION PRODUCTS**  
When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**  
Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

**WASTE DISPOSAL METHOD**  
Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code (CA): 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**RESPIRATORY PROTECTION (Specify type)**  
Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

**VENTILATION**  
Use only with adequate ventilation. Do not use in close quarters or confined spaces. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed in Section II. Use only explosion-proof ventilation equipment.

<b>PROTECTIVE GLOVES</b> PVA coated rubber gloves for frequent dipping/immersion. Use of latex/nitrile surgical gloves or solvent resistant barrier cream should provide adequate protection when normal solvent-cement welding practices and procedures are used for solvent welding of plastic sheet/pipes joints.	<b>EYE PROTECTION</b> Splashproof chemical goggles, face shield, safety glasses (spectacles) with brow guards & side shields, etc. as appropriate for exposure.
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**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**  
Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**  
Store in the shade between 40°F - 110°F (5°C - 43.7°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

**OTHER PRECAUTIONS**  
Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

<b>IPS</b> <b>WELD-ON</b>	<b>MATERIAL SAFETY DATA SHEET</b>	Date Revised: FEB 1999 Supersedes: SEP 1998
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.		
<b>SECTION I</b>		
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248		<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 or 3 E COMPANY (800) 451-8346 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>
<b>CHEMICAL NAME and FAMILY</b> Acrylic Reactive Cement Mixture of Acrylic Resin and Methyl Methacrylate Monomer		<b>TRADE NAME:</b> WELD-ON 810 Component "A" <b>FORMULA:</b> Proprietary
<b>SECTION II - HAZARDOUS INGREDIENTS</b>		
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA		
	<b>CAS#</b>	<b>APPROX %</b>
	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>
	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>
Acrylic Resin	NON/HAZ	N/A
Methyl Methacrylate Monomer	80-62-6	50*
		100 PPM
		100 PPM
*Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.		
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>		<b>SPECIAL HAZARD DESIGNATIONS</b>
DOT Shipping Name: Adhesive		<b>HMIS</b>
DOT Hazard Class: 3		<b>NFPA</b>
Identification Number: UN 1133		<b>HAZARD RATING</b>
Packaging Group: II		HEALTH: 2 2 0 - MINIMAL
Label Required: Flammable Liquid		FLAMMABILITY: 3 3 1 - SLIGHT
		REACTIVITY: 1 1 2 - MODERATE
		PROTECTIVE 3 - SERIOUS
		EQUIPMENT: H 4 - SEVERE
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>		
DOT Shipping Name: Consumer Commodity		
DOT Hazard Class: ORM-D		
H = Eye, Hand/Skin and Respiratory Protection and Impermeable Apron		
<b>SECTION III - PHYSICAL DATA</b>		
<b>APPEARANCE</b> White, heavy viscous liquid	<b>ODOR</b> Distinct Odor	<b>BOILING POINT (°F/°C)</b> 214°F (101°C) Based on Methyl Methacrylate Monomer
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (20°C ± 2°)</b> Typical 1.03 ± 0.040	<b>VAPOR PRESSURE (mm Hg.)</b> 29 mm Hg. @ 68°F (20°C) based on Methyl Methacrylate Monomer	<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 50 -70 %
<b>VAPOR DENSITY (Air = 1)</b> 3.46 based on Monomer	<b>EVAPORATION RATE (BUAC = 1)</b> Approx. 3	<b>SOLUBILITY IN WATER</b> Based on Monomer 1.6
VOC STATEMENT: Maximum VOC 75 grams/liter (when mixed with Component "B"). Reactive Adhesive. Meets SCAQMD Rule 1168.		
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>		
<b>FLASH POINT</b> 51°F (11°C) T.C.C.	<b>FLAMMABLE LIMITS</b> (Percent by Volume)	<b>LEL</b> 2.1
		<b>UEL</b> 12.5
<b>FIRE EXTINGUISHING MEDIA</b> Foam, carbon dioxide,dry chemical, water fog (by trained personnel).		
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Full protective equipment, including self-contained breathing apparatus, is recommended. Cool containers of material exposed to heat with cold water spray. Fight fires from a safe distance or protected area.		
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Sealed containers exposed to elevated temperatures may rupture explosively due to polymerization. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back. Susceptible to spontaneous heating. Considered a fire hazard because of low flash point.		

## SECTION V - HEALTH HAZARD DATA

### PRIMARY ROUTES

OF ENTRY:  Inhalation  Skin Contact  Eye Contact  Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

Inhalation: Exposure may result in nausea, drowsiness, dizziness, headache and other CNS effects. Can cause irritation of eyes and nasal passages.

Skin Contact: Skin irritant. Potential skin sensitizer. Repeated or prolonged contact may result in skin irritation, contact dermatitis, rash, itching, swelling.

Eye Contact: Direct exposure may result in irritation with corneal or conjunctival inflammation.

Ingestion: Moderately toxic. Do not induce vomiting and obtain prompt medical attention.

#### CHRONIC:

Inhalation Toxicity described in animals exposed by inhalation include inflammation of the nasal cavity and changes in nasal sensory cells and slight decrease in body weight.

Ingestion Toxicity described in animals exposed by ingestion include decreased body weight and increased relative kidney weight at high dose levels.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: This material may aggravate an existing dermatitis. Individuals with pre-existing diseases of the lungs, liver or kidney may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation: Remove patient to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Contact physician immediately.

Eye Contact: Immediately flush eyes with water for 15 minutes and contact a physician.

Skin Contact: Wash skin with soap and water for at least 15 minutes. If irritation develops, get medical attention.

Ingestion: Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID: Exposure to fire, heat, sparks, open flame and other sources of ignition, direct sunlight or contact with oxidizing materials.
	STABLE	X	

### INCOMPATIBILITY

(MATERIALS TO AVOID) Reducing and oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

This product gives out carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and smoke upon combustion. Generates heat when mixed with oxidizing materials.

HAZARDOUS	MAY OCCUR	X	CONDITIONS TO AVOID Keep away from heat, sparks, open flame and other sources of ignition.
POLYMERIZATION	WILL NOT OCCUR		

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid exposure of personnel to toxic concentration of vapor and guard against accidental fire and explosion. Contain liquid with sand, earth or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Material should not be allowed to drain into domestic sewer or storm drains. Consult disposal expert.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits set forth in Section II. Use only explosion proof ventilation equipment.

### PROTECTIVE GLOVES

PVA or rubber coated gloves

### EYE PROTECTION

Splashproof chemical goggles

### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in a cool dark place below 70°F (21°C). Keep away from all sources of heat, sparks, open flame and other sources of ignition. Close container after each use. Ground containers when pouring. Use with adequate ventilation. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

IPS WELD-ON		MATERIAL SAFETY DATA SHEET		Date Revised: APR 2008 Supersedes: APR 2007				
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.								
<b>SECTION I</b>								
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248			<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>					
<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for CPVC Plastic Pipe Mixture of CPVC Resin and Organic Solvents		<b>TRADE NAME:</b> WELD-ON FLOWGUARD® GOLD™ Low VOC Cement for CPVC Plastic Pipe <b>FORMULA:</b> Proprietary						
<b>SECTION II - HAZARDOUS INGREDIENTS</b>								
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA								
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>		
Chlorinated Polyvinyl Chloride Resin (CPVC)	NON/HAZ		N/A		N/A			
Tetrahydrofuran (THF)**	109-99-9	30 - 40	50 PPM# Skin	100 PPM	200 PPM	250 PPM		
Methyl Ethyl Ketone (MEK)	78-93-3	15 - 25*	200 PPM	300 PPM	200 PPM			
Cyclohexanone	108-94-1	10 - 18	20 PPM Skin		50 PPM			
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing								
* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.								
# Invista and BASF mfg's Acceptable Exposure Limit (AEL) guidelines for 8 hour and 12 hour TWA, Invista/BASF recommended STEL for 15 minute TWA: 75 PPM.								
**Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.								
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>			<b>SPECIAL HAZARD DESIGNATIONS</b>					
DOT Shipping Name: Adhesive			HMIS			NFPA	HAZARD RATING	
DOT Hazard Class: 3			HEALTH:			2	2	0 - MINIMAL
Identification Number: UN 1133			FLAMMABILITY:			3	3	1 - SLIGHT
Packaging Group: II			REACTIVITY:			0	1	2 - MODERATE
Label Required: Flammable Liquid			PROTECTIVE					3 - SERIOUS
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>			EQUIPMENT:			B - H		4 - SEVERE
DOT Shipping Name: Consumer Commodity			B = Eye, Hand/Skin (for normal solvent-welding, small spill, clean-up activities)					
DOT Hazard Class: ORM-D			H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron (splash/immersion risks)					
<b>SECTION III - PHYSICAL DATA</b>								
<b>APPEARANCE</b> Yellow, medium syrupy liquid		<b>ODOR</b> Ethereal		<b>BOILING POINT (°F/°C)</b> 151 °F (67°C) Based on first boiling component: THF				
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.996 ± 0.040		<b>VAPOR PRESSURE (mm Hg.)</b> 143 mm Hg. based on first boiling component, THF @ 68°F (20°C)		<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 70 - 80%				
<b>VAPOR DENSITY (Air = 1)</b> 2.49		<b>EVAPORATION RATE (BUAC = 1)</b> > 1.0		<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.				
VOC STATEMENT: VOC as manufactured: 700 Grams/Liter (g/l). Maximum VOC emission as applied and tested per SCAQMD Rule 1168, Test Method 316A: 490 g/l.								
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>								
<b>FLASH POINT</b> -4°F (-20°C) T.C.C. Based on THF			<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)		<b>LEL</b> 2.0	<b>UEL</b> 11.8		
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.								
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure mask or airline mask. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.								
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back.								

## SECTION V - HEALTH HAZARD DATA

### PRIMARY ROUTES

OF ENTRY:                        X     Inhalation                        X     Skin Contact                               Eye Contact                               Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

Inhalation:                    Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
Skin Contact:                    Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
Skin Absorption:                    Prolonged or widespread exposure may result in the absorption of harmful amounts of material.  
Eye Contact:                    Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.  
Ingestion:                    Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.  
**CHRONIC:**                    Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days. Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation:                    If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.  
Eye Contact:                    Flush eyes with plenty of water for 15 minutes and call a physician.  
Skin Contact:                    Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.  
Ingestion:                    Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Keep away from heat, sparks, open flame and other sources of ignition.

**INCOMPATIBILITY (MATERIALS TO AVOID)** Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

### HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code (CA): 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Do not use in close quarters or confined spaces. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed in Section II. Use only explosion-proof ventilating equipment.

**PROTECTIVE GLOVES** PVA coated rubber gloves for frequent dipping/immersion. Use of latex/nitrile surgical gloves or solvent resistant barrier cream should provide adequate protection when normal solvent-cement welding practices and procedures are used for making plastic welded pipe joints.

**EYE PROTECTION** Splashproof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as appropriate for exposure.

### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 90°F (5°C - 32.5°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.

### SECTION I

<b>MANUFACTURER'S NAME</b> IPS Corporation  <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248	<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 or 3 E COMPANY (800) 451-8346  <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346  <b>Business: (310) 898-3300</b>
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<b>CHEMICAL NAME and FAMILY</b> Adhesive Bonding Primer for PVC Plastic Pipe Mixture of PVC Resin and Organic Solvents	<b>TRADE NAME:</b> WELD-ON PC-64 Primer/Cleaner for PVC/CPVC Plastic Pipe  <b>FORMULA:</b> Proprietary
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### SECTION II - HAZARDOUS INGREDIENTS

None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA	CAS#	APPROX %	ACGIH-TLV	ACGIH-STEL	OSHA-PEL	OSHA-STEL	DUPONT	
							(A) AEL	(B) STEL
Methyl Ethyl Ketone (MEK)	78-93-3	40*	200 PPM	300 PPM	200 PPM	300 PPM		
Tetrahydrofuran (THF)**	109-99-9	5-10	200 PPM	250 PPM	200 PPM	250 PPM	25 PPM	75 PPM
Acetone	67-64-1	38-48	750 PPM	1000 PPM	750 PPM	1000 PPM		
Cyclohexanone	108-94-1	5-10	25 PPM Skin		25 PPM Skin			

All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

\* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.

(A) Dupont's Acceptable Exposure Limit (AEL) guidelines for 8 hour and 12 hour TWA, (B) Dupont's recommended STEL for 15 minute TWA.

\*\*Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.

BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER	SPECIAL HAZARD DESIGNATIONS			
DOT Shipping Name: Flammable Liquid, n.o.s. (Methyl Ethyl Ketone, Acetone)  DOT Hazard Class: 3 Identification Number: UN 1993 Packaging Group: II Label Required: Flammable Liquid	<b>HMIS</b>	<b>NFPA</b>	<b>HAZARD RATING</b>	
	HEALTH:	2	2	0 - MINIMAL
	FLAMMABILITY:	3	3	1 - SLIGHT
	REACTIVITY:	0	1	2 - MODERATE
	PROTECTIVE EQUIPMENT:			3 - SERIOUS
		H		4 - SEVERE
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b> DOT Shipping Name: Consumer Commodity DOT Hazard Class: ORM-D	H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron			

### SECTION III - PHYSICAL DATA

<b>APPEARANCE</b> Purple, thin liquid	<b>ODOR</b> Ethereal	<b>BOILING POINT (°F/°C)</b> 133°F (57°C) Based on first boiling component: Acetone
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.813 ± 0.040	<b>VAPOR PRESSURE (mm Hg.)</b> 190 mm Hg. based on first boiling component, Acetone @ 68°F (20°C)	<b>PERCENT VOLATILE BY VOLUME (%)</b> 100%
<b>VAPOR DENSITY (Air = 1)</b> 2.0	<b>EVAPORATION RATE (BUAC = 1)</b> 6-11	<b>SOLUBILITY IN WATER</b> Completely soluble in water.

VOC STATEMENT: Maximum VOC emissions when applied and tested per SCAQMD Rule 1168, Test Method 316A: 650 Grams/Liter (g/l).

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

<b>FLASH POINT</b> -6°F (-21°C) T.C.C. Based on Acetone	<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)	<b>LEL</b> 2.1	<b>UEL</b> 13.0
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**FIRE EXTINGUISHING MEDIA**  
Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.

**SPECIAL FIRE FIGHTING PROCEDURES**  
Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure hose masks or airline masks. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**  
Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back.

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY:

Inhalation    
  Skin Contact    
  Eye Contact    
  Ingestion

### EFFECT OF OVEREXPOSURE

**ACUTE:**

**Inhalation:** Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
**Skin Contact:** Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
**Skin Absorption:** Prolonged or widespread exposure may result in the absorption of harmful amounts of material.  
**Eye Contact:** Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.  
**Ingestion:** Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.  
**CHRONIC:** High vapor concentrations may produce CNS depression. Depression may be evidenced by headache, dizziness and nausea. Aspirated material may cause severe lung damage and present a significant hazard.

REPRODUCTIVE EFFECTS N. AP.	TERATOGENICITY N. AP.	MUTAGENICITY N. AP.	EMBRYOTOXICITY N. AP.	SENSITIZATION TO PRODUCT N. AP.	SYNERGISTIC PRODUCTS N. AV.
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**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

**Inhalation:** If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.  
**Eye Contact:** Flush eyes with plenty of water for 15 minutes and call a physician.  
**Skin Contact:** Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.  
**Ingestion:** Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Keep away from heat, sparks, open flame and other sources of ignition.

**INCOMPATIBILITY (MATERIALS TO AVOID)** Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

**HAZARDOUS DECOMPOSITION PRODUCTS**  
 When forced to burn, this product gives out carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**  
 Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code: 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

**RESPIRATORY PROTECTION (Specify type)**  
 Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits set forth in Section II. Use only explosion proof ventilation equipment.

<b>PROTECTIVE GLOVES</b> PVA coated	<b>EYE PROTECTION</b> Splashproof chemical goggles
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**OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES**  
 Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**  
 Store in the shade between 40°F - 110°F (5°C - 43.7°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



IPS WELD-ON		MATERIAL SAFETY DATA SHEET				Date Revised: JUL 2007 Supersedes: APR 1991
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.						
SECTION I						
<b>MANUFACTURER'S NAME</b> M. W. Dunton Company (401) 821-1832		<b>SUPPLIER'S NAME</b> IPS Corporation		<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300		
<b>ADDRESS</b> 3 Bridal Avenue, P.O. Box 232 West Warwick, RI 02893		<b>ADDRESS</b> 202 Industrial Park Lane Collierville, TN 38027		<b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (800) 489-4848, (310) 898-3300</b>		
<b>CHEMICAL NAME and FAMILY</b> Mixture of Meltable Metallic and other compounds			<b>TRADE NAME:</b> WELD-ON Paste Flux <b>FORMULA:</b> Proprietary			
SECTION II - HAZARDOUS INGREDIENTS						
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA						
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>
Zinc Chloride	7646-85-7	10 - 25	1 mg/m <sup>3</sup>		1 mg/m <sup>3</sup>	2mg/m <sup>3</sup>
Ammonium Chloride	12125-02-9	10 - 25	10 mg/m <sup>3</sup>	N/A	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup>
Petrolatum	8009-03-8	<80	N/A	N/A	N/A	N/A
# Not considered hazardous Listed here for Medical Information						
# Title III Section 313 Supplier Notification: This product contains no toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.						
<b>SHIPPING INFORMATION</b>			<b>SPECIAL HAZARD DESIGNATIONS</b>			
DOT Shipping Name:	N/A		<b>HMIS</b>	<b>NFPA</b>	<b>HAZARD RATING</b>	
DOT Hazard Class:	N/A		HEALTH:	0	1	0 - MINIMAL
Identification Number:	N/A		FLAMMABILITY:	0	1	1 - SLIGHT
Packaging Group:	N/A		REACTIVITY:	0	0	2 - MODERATE
Label Required:	N/A		PROTECTIVE			3 - SERIOUS
			EQUIPMENT:	None		4 - SEVERE
<b>Not considered a hazardous material or "dangerous goods" for transport</b>						
SECTION III - PHYSICAL DATA						
<b>APPEARANCE</b> Tan/gold to black, paste-like		<b>ODOR</b> No appreciable odor		<b>BOILING POINT (°F/°C)</b> N/A		
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> 1.06		<b>VAPOR PRESSURE (mm Hg.)</b> N/A		<b>PERCENT VOLATILE BY VOLUME (%)</b> Negligible		
<b>VAPOR DENSITY (Air = 1)</b> N/A		<b>EVAPORATION RATE (BUAC = 1)</b> N/A		<b>SOLUBILITY IN WATER</b> Insoluble		
VOC STATEMENT: Contains no volatile compounds.						
SECTION IV - FIRE AND EXPLOSION HAZARD DATA						
<b>FLASH POINT</b> >204°C		<b>MELTING POINT</b> 120 - 150°F		<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)		<b>LEL</b> N/A
				Non Flammable		<b>UEL</b> N/A
<b>FIRE EXTINGUISHING MEDIA</b> Carbon dioxide, sand or non-combustible absorbent, or foam.						
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> When/if large quantities are involved in a fire, spectators should be directed up wind and firefighters should use self-contained breathing apparatus and protective clothing						
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Carbon monoxide (CO), Oxides of Nitrogen (NO2), as well as fumes of zinc chloride and zinc oxide may be released in the event of fire.						

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES  
OF ENTRY:

Inhalation  Skin Contact  Eye Contact  Ingestion

### EFFECT OF OVEREXPOSURE

ACUTE and CHRONIC: None currently known.

INHALATION: May cause headache/dizziness, damage to upper or lower respiratory tract or pulmonary irritation.

SKIN CONTACT: May result in discomfort, reversible irritation (rash) to skin.

EYE CONTACT: May result in blurred vision, reversible eye irritation.

INGESTION: Do not induce vomiting. Consult a physician.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	POSS	N. AP.	N. AP.	N. AP.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Dermatitis, respiratory diseases, conjunctivitis.

### EMERGENCY AND FIRST AID PROCEDURES

In all cases, remove source(s) of exposure.

INHALATION: Remove patient to fresh air/well ventilated area. Give oxygen if breathing is difficult. Give artificial respiration if breathing has stopped. If necessary, consult a physician.

EYE CONTACT: Flush with flowing water for 15 minutes, including under the eyelids. If irritation persists, get medical attention.

SKIN CONTACT: Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention. Wash clothes before reuse.

INGESTION: Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Material may be incompatible with nylon and/or celcon plastics. Cyanides may release HCN gas when mixed with zinc chloride.

### INCOMPATIBILITY

(MATERIALS TO AVOID) Strong oxidizers.

### HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this compound gives off smoke, carbon monoxide (CO), oxides of Nitrogen (NO<sub>2</sub>), fumes of zinc chloride and zinc oxide.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	N/A

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Neutralize with sodium carbonate or tri-sodium phosphate, contain with dike. Keep out of waterways

### WASTE DISPOSAL METHOD

Follow all Local, State and Federal regulations. Flush or shovel into steel drums. Dispose of as chemical waste. Consult disposal expert.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

When soldering in a confined, non-ventilated space, use fume or air line respirator. For evacuation, use self-contained breathing apparatus.

### VENTILATION

When soldering, provide local exhaust ventilation to remove gases and fumes from breathing zones of workers and to capture all fumes and gases.

### PROTECTIVE GLOVES

Rubber gloves for sensitive workers.

### EYE PROTECTION

Face shield, safety glasses or splash goggles if splashing is likely.

### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Head and body protection will help to prevent injury from splashing, sparks or fire. Keep out of the reach of children.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Flux is a stable solid material in closed containers at room temperature under normal storage and handling conditions.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label and product bulletins. Clothing soiled by this product should be laundered prior to reuse.

Prevent eye contact. Train workers to keep their heads out of any soldering fume plume.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

IPS WELD-ON		<b>MATERIAL SAFETY DATA SHEET</b>				Date Revised: APR 2008 Supersedes: NOV 2007
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SECTION I						
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248				<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>		
<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for PVC Plastic Pipe Mixture of PVC Resin and Organic Solvents				<b>TRADE NAME:</b> WELD-ON 700 for PVC Plastic Pipe <b>FORMULA:</b> Proprietary		
SECTION II - HAZARDOUS INGREDIENTS						
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA						
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>
Polyvinyl Chloride Resin (PVC)	NON/HAZ		N/A		N/A	
Acetone	67-64-1	35 - 50	500 PPM	750 PPM	750 PPM	1000 PPM
Tetrahydrofuran (THF)**	109-99-9	15 - 30	50 PPM# Skin	100 PPM	200 PPM	250 PPM
Cyclohexanone	108-94-1	10 - 25	20 PPM Skin		50 PPM	
Methyl Ethyl Ketone (MEK)	78-93-3	0 - 5*	200 PPM	300 PPM	200 PPM	300 PPM
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from such listing.						
* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.						
# Invista and BASF mf's Acceptable Exposure Limit (AEL) guidelines for 8 hour and 12 hour TWA, Invista/BASF recommended STEL for 15 minute TWA.: 75 PPM.						
**Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.						
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>				<b>SPECIAL HAZARD DESIGNATIONS</b>		
DOT Shipping Name: Adhesive				<b>HMIS</b>		
DOT Hazard Class: 3				<b>NFPA</b>		
Identification Number: UN 1133				<b>HAZARD RATING</b>		
Packaging Group: II				HEALTH: 2 2 0 - MINIMAL		
Label Required: Flammable Liquid				FLAMMABILITY: 3 3 1 - SLIGHT		
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>				REACTIVITY: 0 1 2 - MODERATE		
DOT Shipping Name: Consumer Commodity				PROTECTIVE EQUIPMENT: 3 - SERIOUS		
DOT Hazard Class: ORM-D				EQUIPMENT: B - H 4 - SEVERE		
B = Eye, Hand/Skin (for normal solvent-welding activities) H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron (splash/immersion risks)						
SECTION III - PHYSICAL DATA						
<b>APPEARANCE</b> Clear, regular syrupy liquid	<b>ODOR</b> Ethereal (Threshold = 2-50 PPM)	<b>BOILING POINT (°F/°C)</b> 133°F (57°C)		<b>FREEZING POINT</b> -139°F (-95°C) Based on Acetone		
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical: 0.895 ± 0.040	<b>VAPOR PRESSURE (mm Hg.)</b> 190 mm Hg. based on first boiling component, Acetone @ 68°F (20°C)	<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 80 - 90 %				
<b>VAPOR DENSITY (Air = 1)</b> 2.49	<b>EVAPORATION RATE (BUAC = 1)</b> > 1.0	<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.				
VOC STATEMENT: VOC as manufactured: 850 Grams/Liter (g/l). Maximum VOC emission when applied and tested per SCAQMD Rule 1168, Test Method 316A: 600 g/l.						
SECTION IV - FIRE AND EXPLOSION HAZARD DATA						
<b>FLASH POINT</b> -6°F (-21°C) T.C.C. Based on Acetone	<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)				<b>LEL</b>	<b>UEL</b>
					2.1	13.0
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.						
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure mask or airline mask. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.						
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and may flash back.						

## SECTION V - HEALTH HAZARD DATA

### PRIMARY ROUTES

OF ENTRY:                        X     Inhalation                        X     Skin Contact                               Eye Contact                               Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

Inhalation:                    Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
Skin Contact:                    Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
Skin Absorption:                    Prolonged or widespread exposure may result in the absorption of harmful amounts of material.  
Eye Contact:                    Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.  
Ingestion:                    Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.  
**CHRONIC:**                    Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days. Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation:                    If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.  
Eye Contact:                    Flush eyes with plenty of water for 15 minutes and call a physician.  
Skin Contact:                    Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.  
Ingestion:                    Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE			CONDITIONS TO AVOID
	STABLE	X		Keep away from heat, sparks, open flame and other sources of ignition.

### INCOMPATIBILITY

(MATERIALS TO AVOID) Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

### HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS	MAY OCCUR			CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X		Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code (CA): 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Do not use in close quarters or confined spaces. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed in Section II. Use only explosion-proof ventilation equipment.

**PROTECTIVE GLOVES**    PVA coated rubber gloves for frequent dipping/immersion. Use of latex/nitrile surgical gloves or solvent resistant barrier cream should provide adequate protection when normal solvent-cement welding practices and procedures are used for solvent welding of plastic sheet/pipe joints.

**EYE PROTECTION**    Splashproof chemical goggles, face shield, safety glasses (spectacles) with brow guards & side shields, etc. as appropriate for exposure.

### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 110°F (5°C - 43.7°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

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### SECTION I

<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248	<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>
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<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for PVC Plastic Pipe Mixture of PVC Resin and Organic Solvents	<b>TRADE NAME:</b> WELD-ON 702, 704, 705, 707, 710, 711, 717, 719 and 721 for PVC Plastic Pipe FORMULA: Proprietary
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### SECTION II - HAZARDOUS INGREDIENTS

None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA

	CAS#	APPROX %	ACGIH-TLV	ACGIH-STEL	OSHA-PEL	OSHA-STEL
Polyvinyl Chloride Resin (PVC)	NON/HAZ		N/A		N/A	
Tetrahydrofuran (THF)**	109-99-9	25 - 70	50 PPM# Skin	100 PPM	200 PPM	250 PPM
Methyl Ethyl Ketone (MEK)	78-93-3	5 - 40*	200 PPM	300 PPM	200 PPM	300 PPM
Cyclohexanone	108-94-1	1 - 15	20 PPM Skin		50 PPM	

All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.

\* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.

# Invista and BASF Mfg's Acceptable Exposure Limit (AEL) guidelines for 8 hour and 12 hour TWA, Invista/BASF recommended STEL for 15 minute TWA: 75 PPM.

\*\*Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.

<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b> DOT Shipping Name: Adhesive DOT Hazard Class: 3 Identification Number: UN 1133 Packaging Group: II Label Required: Flammable Liquid <b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b> DOT Shipping Name: Consumer Commodity DOT Hazard Class: ORM-D	<b>SPECIAL HAZARD DESIGNATIONS</b> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>HMIS</th> <th>NFPA</th> <th>HAZARD RATING</th> </tr> </thead> <tbody> <tr> <td>HEALTH:</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td>0 - MINIMAL</td> </tr> <tr> <td>FLAMMABILITY:</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> <td>1 - SLIGHT</td> </tr> <tr> <td>REACTIVITY:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1</td> <td>2 - MODERATE</td> </tr> <tr> <td>PROTECTIVE</td> <td></td> <td></td> <td>3 - SERIOUS</td> </tr> <tr> <td>EQUIPMENT:</td> <td style="text-align: center;">B - H</td> <td></td> <td>4 - SEVERE</td> </tr> </tbody> </table> <p>B = Eye, Hand/Skin (for normal solvent-welding, small spill, clean-up activities)                  H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron (splash/immersion risks)</p>		HMIS	NFPA	HAZARD RATING	HEALTH:	2	2	0 - MINIMAL	FLAMMABILITY:	3	3	1 - SLIGHT	REACTIVITY:	0	1	2 - MODERATE	PROTECTIVE			3 - SERIOUS	EQUIPMENT:	B - H		4 - SEVERE
	HMIS	NFPA	HAZARD RATING																						
HEALTH:	2	2	0 - MINIMAL																						
FLAMMABILITY:	3	3	1 - SLIGHT																						
REACTIVITY:	0	1	2 - MODERATE																						
PROTECTIVE			3 - SERIOUS																						
EQUIPMENT:	B - H		4 - SEVERE																						

### SECTION III - PHYSICAL DATA

APPEARANCE	ODOR	BOILING POINT (°F/°C)	FREEZING POINT
704 - clear or gray, medium syrupy liquid; 705 - gray, clear or white, medium syrupy liquid; 702, 707 - clear, medium syrupy liquid; 710 - clear, thin syrupy liquid; 711 - white or opaque gray, heavy syrupy liquid; 717 - opaque gray, clear or white heavy syrupy liquid; 719 - clear, gray, green or white, paste-like; 721 - blue, medium syrupy liquid	Ethereal (Threshold = 2-50 PPM)	151 °F (67 °C)	-163 °F (-108.5 °C)
		Based on THF	
<b>SPECIFIC GRAVITY @ 73 °F ± 3.6° (23 °C ± 2°)</b> Variable by product ranging from 0.900 to 0.981 ± 0.040	<b>VAPOR PRESSURE (mm Hg.)</b> 143 mm Hg. based on first boiling component, THF @ 68 °F (20 °C)	<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 80 - 90 %	
<b>VAPOR DENSITY (Air = 1)</b> 2.49	<b>EVAPORATION RATE (BUAC = 1)</b> > 1.0	<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.	

VOC STATEMENT: VOC as manufactured: 850 Grams/Liter (g/l). Maximum VOC emission when applied and tested per SCAQMD Rule 1168, Test Method 316A: 600 g/l.

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

<b>FLASH POINT</b> -4 °F (-20 °C) T.C.C. Based on THF	<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)	<b>LEL</b>	<b>UEL</b>
		2.0	11.8

**FIRE EXTINGUISHING MEDIA**  
 Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.

**SPECIAL FIRE FIGHTING PROCEDURES**  
 Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure mask or airline mask. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**  
 Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and may flash back.

## SECTION V - HEALTH HAZARD DATA

### PRIMARY ROUTES

OF ENTRY:                        X     Inhalation                        X     Skin Contact                               Eye Contact                               Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

Inhalation:                    Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
Skin Contact:                    Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
Skin Absorption:                    Prolonged or widespread exposure may result in the absorption of harmful amounts of material.  
Eye Contact:                    Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.  
Ingestion:                    Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.  
**CHRONIC:**                    Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days. Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation:                    If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.  
Eye Contact:                    Flush eyes with plenty of water for 15 minutes and call a physician.  
Skin Contact:                    Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.  
Ingestion:                    Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE			CONDITIONS TO AVOID
	STABLE	X		Keep away from heat, sparks, open flame and other sources of ignition.

### INCOMPATIBILITY

(MATERIALS TO AVOID) Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

### HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS	MAY OCCUR			CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X		Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code (CA): 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Do not use in close quarters or confined spaces. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed in Section II. Use only explosion-proof ventilation equipment.

**PROTECTIVE GLOVES**    PVA coated rubber gloves for frequent dipping/immersion. Use of latex/nitrile surgical gloves or solvent resistant barrier cream should provide adequate protection when normal solvent-cement welding practices and procedures are used for solvent welding of plastic sheet/pipe joints.

**EYE PROTECTION**    Splashproof chemical goggles, face shield, safety glasses (spectacles) with brow guards & side shields, etc. as appropriate for exposure.

### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 110°F (5°C - 43.7°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

IPS WELD-ON		MATERIAL SAFETY DATA SHEET				Date Revised: OCT 2004 Supersedes: MAY 2002	
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.							
SECTION I							
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248				<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>			
<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for CPVC Plastic Pipe Mixture of CPVC Resin and Organic Solvents				<b>TRADE NAME:</b> WELD-ON 713 For CPVC Plastic Pipe <b>FORMULA:</b> Proprietary			
SECTION II - HAZARDOUS INGREDIENTS							
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA							
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>	<b>DUPONT (A) AEL (B) STEL</b>
Chlorinated Polyvinyl Chloride Resin (CPVC)	NON/HAZ		N/A		N/A		
Tetrahydrofuran (THF)**	109-99-9	45 - 55	200 PPM	250 PPM	200 PPM	250 PPM	50 PPM 75 PPM
Methyl Ethyl Ketone (MEK)	78-93-3	15 - 25*	200 PPM	300 PPM	200 PPM	300 PPM	
Cyclohexanone	108-94-1	5 - 15	20 PPM Skin	50 PPM	50 PPM Skin		
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.							
* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.							
(A) Dupont and BASF mfg's Acceptable Exposure limit (AEL) guidelines for 8 hour and 12 hour TWA, (B) Dupont/BASF recommended STEL for 15 minute TWA.							
**Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.							
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>				<b>SPECIAL HAZARD DESIGNATIONS</b>			
DOT Shipping Name: Adhesive				<b>HMIS</b>			
DOT Hazard Class: 3				<b>NFPA</b>			
Identification Number: UN 1133				<b>HAZARD RATING</b>			
Packaging Group: II				HEALTH: 2			
Label Required: Flammable Liquid				FLAMMABILITY: 3			
				REACTIVITY: 0			
				PROTECTIVE EQUIPMENT: B - H			
				HAZARD RATING: 0 - MINIMAL			
				HAZARD RATING: 1 - SLIGHT			
				HAZARD RATING: 2 - MODERATE			
				HAZARD RATING: 3 - SERIOUS			
				HAZARD RATING: 4 - SEVERE			
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>				B = Eye, Hand/Skin (for normal solvent-welding, small spill, clean-up activities)			
DOT Shipping Name: Consumer Commodity				H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron (splash/immersion risks)			
DOT Hazard Class: ORM-D							
SECTION III - PHYSICAL DATA							
<b>APPEARANCE</b> Orange, medium syrupy liquid		<b>ODOR</b> Ethereal		<b>BOILING POINT (°F/°C)</b> 151°F (67°C) Based on first boiling component: THF			
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.930 ± 0.040		<b>VAPOR PRESSURE (mm Hg.)</b> 143 mm Hg. based on first boiling component, THF @ 68°F (20°C)		<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 80 - 90 %			
<b>VAPOR DENSITY (Air = 1)</b> 2.49		<b>EVAPORATION RATE (BUAC = 1)</b> > 1.0		<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.			
VOC STATEMENT: VOC as manufactured 850 Grams/Liter (g/l). Maximum VOC emissions as applied and tested per SCAQMD Rule 1168, Test Method 316A: 600 g/l.							
SECTION IV - FIRE AND EXPLOSION HAZARD DATA							
<b>FLASH POINT</b> -4°F (-20°C)T.C.C. Based on THF		<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)				<b>LEL</b>	<b>UEL</b>
						2.0	11.8
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.							
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure mask or airline mask. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.							
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back.							

## SECTION V - HEALTH HAZARD DATA

### PRIMARY ROUTES

OF ENTRY:                X     Inhalation                X     Skin Contact                       Eye Contact                       Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

Inhalation:            Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
Skin Contact:            Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
Skin Absorption:            Prolonged or widespread exposure may result in the absorption of harmful amounts of material.  
Eye Contact:            Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.  
Ingestion:            Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.

#### CHRONIC:

Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days. Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation:            If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.  
Eye Contact:            Flush eyes with plenty of water for 15 minutes and call a physician.  
Skin Contact:            Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.  
Ingestion:            Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Keep away from heat, sparks, open flame and other sources of ignition.

#### INCOMPATIBILITY

(MATERIALS TO AVOID) Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

#### HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

#### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

#### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code (CA): 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

#### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

#### VENTILATION

Use only with adequate ventilation. Do not use in close quarters or confined spaces. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed in Section II. Use only explosion-proof ventilation equipment.

**PROTECTIVE GLOVES**    PVA coated rubber gloves for frequent dipping/immersion. Use of latex/nitrile surgical gloves or solvent resistant barrier creme should provide adequate protection when normal solvent-cement welding practices and procedures are used for making plastic welded pipe joints.

**EYE PROTECTION**    Splashproof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as appropriate for exposure.

#### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 90°F (5°C - 32.5°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

#### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



IPS WELD-ON		MATERIAL SAFETY DATA SHEET				Date Revised: FEB 2001 Supersedes: FEB 1999	
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.							
SECTION I							
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248				<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 or 3 E COMPANY (800) 451-8346 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>			
<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for CPVC Plastic Pipe Mixture of CPVC Resin and Organic Solvents				<b>TRADE NAME:</b> WELD-ON 714 for CPVC Plastic Pipe <b>FORMULA:</b> Proprietary			
SECTION II - HAZARDOUS INGREDIENTS							
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA							
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>	<b>DUPONT (A) AEL (B) STEL</b>
Chlorinated Polyvinyl Chloride Resin (CPVC)	NON/HAZ		N/A		N/A		
Tetrahydrofuran (THF)**	109-99-9	50-70	200 PPM	250 PPM	200 PPM	250 PPM	25 PPM 75 PPM
Methyl Ethyl Ketone (MEK)	78-93-3	9*	200 PPM	300 PPM	200 PPM	300 PPM	
Cyclohexanone	108-94-1	5-15	25 PPM Skin		25 PPM Skin		
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.							
* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.							
(A) Dupont's Acceptable Exposure Limit (AEL) guidelines for 8 hour and 12 hour TWA, (B) Dupont's recommended STEL for 15 minute TWA.							
**Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.							
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>				<b>SPECIAL HAZARD DESIGNATIONS</b>			
DOT Shipping Name: Adhesive				<b>HMIS</b>			
DOT Hazard Class: 3				<b>NFPA</b>			
Identification Number: UN 1133				<b>HAZARD RATING</b>			
Packaging Group: II				HEALTH: 2			
Label Required: Flammable Liquid				FLAMMABILITY: 3			
				REACTIVITY: 0			
				PROTECTIVE: 3 - SERIOUS			
				EQUIPMENT: H			
				HAZARD RATING: 4 - SEVERE			
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>				H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron			
DOT Shipping Name: Consumer Commodity							
DOT Hazard Class: ORM-D							
SECTION III - PHYSICAL DATA							
<b>APPEARANCE</b> Orange or gray, heavy syrupy liquid		<b>ODOR</b> Ethereal		<b>BOILING POINT (°F/°C)</b> 151°F (67°C) Based on first boiling component: THF			
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.968 ± 0.040		<b>VAPOR PRESSURE (mm Hg.)</b> 143 mm Hg. based on first boiling component, THF @ 68°F (20°C)		<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 80 - 90 %			
<b>VAPOR DENSITY (Air = 1)</b> 2.49		<b>EVAPORATION RATE (BUAC = 1)</b> > 1.0		<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.			
VOC STATEMENT: VOC as manufactured 850 Grams/Liter (g/l). Maximum VOC emissions as applied and tested per SCAQMD Rule 1168, Test Method 316A: 600 g/l.							
SECTION IV - FIRE AND EXPLOSION HAZARD DATA							
<b>FLASH POINT</b> -4°F (-20°C) T.C.C. Based on THF				<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)		<b>LEL</b>	<b>UEL</b>
						2.0	11.8
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.							
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure mask or airline mask. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.							
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back.							

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES  
OF ENTRY:

Inhalation  Skin Contact  Eye Contact  Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

##### Inhalation:

Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.

##### Skin Contact:

Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.

##### Skin Absorption:

Prolonged or widespread exposure may result in the absorption of harmful amounts of material.

##### Eye Contact:

Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.

##### Ingestion:

Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.

#### CHRONIC:

Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days.

Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.

REPRODUCTIVE EFFECTS N. AP.	TERATOGENICITY N. AP.	MUTAGENICITY N. AP.	EMBRYOTOXICITY N. AP.	SENSITIZATION TO PRODUCT N. AP.	SYNERGISTIC PRODUCTS N. AV.
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MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

### EMERGENCY AND FIRST AID PROCEDURES

#### Inhalation:

If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.

#### Eye Contact:

Flush eyes with plenty of water for 15 minutes and call a physician.

#### Skin Contact:

Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.

#### Ingestion:

Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Keep away from heat, sparks, open flame and other sources of ignition.

### INCOMPATIBILITY

(MATERIALS TO AVOID) Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

### HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code (CA): 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits set forth in Section II. Use only explosion proof ventilation equipment.

### PROTECTIVE GLOVES

PVA coated

### EYE PROTECTION

Splashproof chemical goggles

### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 90°F (5°C - 32.5°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

IPS WELD-ON		<b>MATERIAL SAFETY DATA SHEET</b>				Date Revised: APR 2007 Supersedes: JAN 2005	
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.							
SECTION I							
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248				Transportation Emergencies: CHEMTREC: (800) 424-9300 Medical Emergencies: 3 E COMPANY (24 Hour No.) (800) 451-8346 Business: (310) 898-3300			
<b>CHEMICAL NAME and FAMILY</b> Mixture of ABS Resin and Organic Solvent ABS Plastic Adhesive				<b>TRADE NAME:</b> WELD-ON 2771 and 2773 Low VOC Pipe Cement for ABS Plastic Pipe FORMULA: Proprietary			
SECTION II - HAZARDOUS INGREDIENTS							
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA							
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>	
Acrylonitrile Butadiene Styrene Resin (ABS)	NON/HAZ		N/A		N/A		
Methyl Ethyl Ketone (MEK)	78-93-3	50 - 65*	200 PPM	300 PPM	200 PPM	300 PPM	
Acetone	67-64-1	10 - 15	500 PPM	750 PPM	750 PPM	1000 PPM	
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.							
* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.							
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>				<b>SPECIAL HAZARD DESIGNATIONS</b>			
DOT Shipping Name: Adhesive				<b>HMIS</b>			
DOT Hazard Class: 3				<b>NFPA</b>			
Identification Number: UN 1133				<b>HAZARD RATING</b>			
Packaging Group: II				HEALTH: 2			
Label Required: Flammable Liquid				FLAMMABILITY: 3			
				REACTIVITY: 0			
				PROTECTIVE EQUIPMENT: B - H			
				HAZARD RATING: 0 - MINIMAL			
				HAZARD RATING: 1 - SLIGHT			
				HAZARD RATING: 2 - MODERATE			
				HAZARD RATING: 3 - SERIOUS			
				HAZARD RATING: 4 - SEVERE			
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>				B = Eye, Hand/Skin (for normal solvent-welding, small spill, clean-up activities)			
DOT Shipping Name: Consumer Commodity				H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron (splash/immersion risks)			
DOT Hazard Class: ORM-D							
SECTION III - PHYSICAL DATA							
<b>APPEARANCE</b> 2771: Milky, translucent, medium syrupy liquid 2773: Black opaque, medium syrupy liquid		<b>ODOR</b> Ketone		<b>BOILING POINT (°F/°C)</b> 175.2°F (79°C) Based on MEK			
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.875 - 0.894 ± 0.040		<b>VAPOR PRESSURE (mm Hg.)</b> 71.2 mm Hg. Based on MEK @ 73°F (23°C)		<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 50 - 70 %			
<b>VAPOR DENSITY (Air = 1)</b> 2.5		<b>EVAPORATION RATE (BUAC = 1)</b> Approx. 5.7		<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.			
VOC STATEMENT: Maximum VOC emissions as applied and tested per SCAQMD Rule 1168, Test Method 316A: 325 Grams/Liter (g/l).							
SECTION IV - FIRE AND EXPLOSION HAZARD DATA							
<b>FLASH POINT</b> 21°F (-6°C) T.C.C. Based on MEK		<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)			<b>LEL</b>	<b>UEL</b>	
					1.8	11.5	
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.							
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure mask or airline mask. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.							
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower levels and flash back.							

## SECTION V - HEALTH HAZARD DATA

### PRIMARY ROUTES

OF ENTRY:           X       Inhalation       X       Skin Contact           Eye Contact           Ingestion

### EFFECT OF OVEREXPOSURE

#### ACUTE:

Inhalation:                   Concentrations of 100-300 ppm cause nose and throat irritation. Higher concentrations cause irritation, headache, nausea, drowsiness, dizziness, incoordination.

Skin Contact:               Prolonged exposure to liquid or vapors at concentrations greater than the TLV causes moderate irritation and dermatitis.

Eye Contact:               Liquid and vapors are irritating to eyes. Can cause severe injury - damage reversible.

Ingestion:                   Moderately toxic. May cause nausea, vomiting and diarrhea.

**CHRONIC:**                   There is no evidence that exposure to Methyl Ethyl Ketone (MEK) alone causes progressive or irreversible neurotoxic effects. However, simultaneous over-exposure to MEK and n-Hexane can potentiate the known irreversible neurotoxic effects of n-Hexane. There is no reported human evidence that these neurotoxic effects occur when exposure to both chemicals is maintained below established OSHA and ACGIH limits.

REPRODUCTIVE EFFECTS N. AP.	TERATOGENICITY N. AP.	MUTAGENICITY N. AP.	EMBRYOTOXICITY N. AP.	SENSITIZATION TO PRODUCT N. AP.	SYNERGISTIC PRODUCTS N. AV.
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**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** This material may aggravate an existing dermatitis. Breathing of vapor and/or mist may aggravate asthma and inflammatory or fibrotic pulmonary diseases.

### EMERGENCY AND FIRST AID PROCEDURES

Inhalation:               If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.

Eye Contact:             Flush eyes with plenty of water for 15 minutes and call a physician.

Skin Contact:           Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.

Ingestion:               Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Keep away from heat, sparks, open flame and other sources of ignition.

### INCOMPATIBILITY

(MATERIALS TO AVOID) Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

### HAZARDOUS DECOMPOSITION PRODUCTS

On combustion: Dense smoke containing carbon monoxide, carbon dioxide and hydrogen cyanide.

HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

### STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

### WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

### VENTILATION

Use only with adequate ventilation. Do not use in close quarters or confined spaces. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed in Section II. Use only explosion-proof ventilation equipment.

**PROTECTIVE GLOVES**       PVA coated rubber gloves for frequent dipping/immersion. Use of latex/nitrile surgical gloves or solvent resistant barrier cream should provide adequate protection when normal solvent-cement welding practices and procedures are used for solvent welding of plastic sheet/pipe joints.

**EYE PROTECTION**       Splashproof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as appropriate for exposure.

### OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 110°F (5°C - 44°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

### OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.

**SECTION I - PRODUCT INFORMATION**

<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248	<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>
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<b>CHEMICAL NAME and FAMILY</b> Mixture of oils and inorganic fillers	<b>TRADE NAME:</b> WELD-ON Soft Seal Plumbers Putty <b>FORMULA:</b> Proprietary
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**SECTION II - HAZARDOUS INGREDIENTS**

None of the ingredients in this product are classified as a "Hazardous Material" in normal use as defined in the U.S. Dept. of Labor Regulations 29 CFR 1501, 1502 and 1503.

None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA

	CAS#	APPROX %	ACGIH-TLV	ACGIH-STEL	OSHA-PEL	OSHA-STEL
Naphthanic Petroleum Oil - 100	64742-52-5	5 - 15	5 mg/m <sup>3</sup>		5 mg/m <sup>3</sup>	
S-60-Z-5	68082-77-0	2 - 8	N.E		N.E	
Limestone	1317-650-3	60 - 80	10 mg/m <sup>3</sup>		15 mg/m <sup>3</sup>	
Clay	68953-58-2	10 - 20	50 MPPCF		15 mg/m <sup>3</sup>	

All of the constituents of Weld-On adhesive products are either exempt from or are listed on the TSCA inventory of chemical substances maintained by the US EPA.

<b>SHIPPING INFORMATION FOR GALLON CONTAINERS OR ABOVE</b> DOT Shipping Name: N/A DOT Hazard Class: N/A Identification Number: N/A Packaging Group: N/A Label Required: N/A	<b>SPECIAL HAZARD DESIGNATIONS</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center;">HMIS</td> <td style="text-align: center;">NFPA</td> <td style="text-align: center;">HAZARD RATING</td> </tr> <tr> <td>HEALTH:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0 - MINIMAL</td> </tr> <tr> <td>FLAMMABILITY:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">1 - SLIGHT</td> </tr> <tr> <td>REACTIVITY:</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">2 - MODERATE</td> </tr> <tr> <td>PROTECTIVE</td> <td></td> <td></td> <td style="text-align: center;">3 - SERIOUS</td> </tr> <tr> <td>EQUIPMENT:</td> <td style="text-align: center;">B</td> <td></td> <td style="text-align: center;">4 - SEVERE</td> </tr> </table> <p>B = Eye, Hand/Skin Protection</p>		HMIS	NFPA	HAZARD RATING	HEALTH:	0	0	0 - MINIMAL	FLAMMABILITY:	0	0	1 - SLIGHT	REACTIVITY:	0	0	2 - MODERATE	PROTECTIVE			3 - SERIOUS	EQUIPMENT:	B		4 - SEVERE
	HMIS	NFPA	HAZARD RATING																						
HEALTH:	0	0	0 - MINIMAL																						
FLAMMABILITY:	0	0	1 - SLIGHT																						
REACTIVITY:	0	0	2 - MODERATE																						
PROTECTIVE			3 - SERIOUS																						
EQUIPMENT:	B		4 - SEVERE																						
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE GALLON</b> DOT Shipping Name: N/A DOT Hazard Class: N/A																									

**SECTION III - PHYSICAL DATA**

<b>APPEARANCE</b> Yellowish in color, paste-like	<b>ODOR</b> Oil-like	<b>BOILING POINT (°F/°C)</b> N/A
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 2.1	<b>VAPOR PRESSURE (mm Hg.)</b> N/A	<b>PERCENT VOLATILE BY VOLUME (%)</b> N/A
<b>VAPOR DENSITY (Air = 1)</b> N/A	<b>EVAPORATION RATE (BUAC = 1)</b> N/A	<b>SOLUBILITY IN WATER</b> Insoluble

VOC STATEMENT: Maximum VOC as manufactured: 28 Grams/Liter.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

<b>FLASH POINT</b> N/A	<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)	LEL	UEL
		1.1	10.6
<b>FIRE EXTINGUISHING MEDIA</b> N/A			

**SPECIAL FIRE FIGHTING PROCEDURES**  
 N/A

**UNUSUAL FIRE AND EXPLOSION HAZARDS**  
 N/A

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: \_\_\_\_\_ Inhalation \_\_\_\_\_ Skin Contact  Eye Contact  Ingestion

EFFECT OF OVEREXPOSURE  
None currently known.

REPRODUCTIVE EFFECTS    TERATOGENICITY    MUTAGENICITY    EMBRYOTOXICITY    SENSITIZATION TO PRODUCT    SYNERGISTIC PRODUCTS  
N. AP.                            N. AP.                            N. AP.                            N. AP.                            N. AP.                            N. AV.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:                            None specifically known.

### EMERGENCY AND FIRST AID PROCEDURES

INHALATION:                    N/A  
EYE CONTACT:                Flush with plenty of water. If irritation persists, get medical attention.  
SKIN CONTACT:                N/A  
INGESTION:                     Give 1 or 2 glasses of water or milk, do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	N/A

INCOMPATIBILITY  
(MATERIALS TO AVOID) Acid

HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X	N/A

## SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED  
Clean up by scraping, bagging or boxing and place in trash.

WASTE DISPOSAL METHOD  
Follow all Local, State and Federal regulations.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)  
None required with normal ventilation.

VENTILATION  
Provide adequate ventilation.

PROTECTIVE GLOVES None needed.	EYE PROTECTION None needed.
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OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES  
N/A

## SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING  
No special handling precautions. Follow good industrial safety practices.

OTHER PRECAUTIONS  
Follow all precautionary information given on container label and product bulletins and other literature.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

<b>IPS</b>	<b>SAFETY DATA SHEET</b>			Date Revised: MAY 2007		
<b>WELD-ON</b>				Supersedes: FEB 2005		
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.						
<b>SECTION I - PRODUCT INFORMATION</b>						
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248			<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>			
<b>CHEMICAL NAME and FAMILY</b> Mixture of Alcohol/Glycol and inorganic compounds			<b>TRADE NAME:</b> WELD-ON White Seal Pipe Joint Compound <b>FORMULA:</b> Proprietary			
<b>SECTION II - HAZARDOUS INGREDIENTS</b>						
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA						
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>
Isopropyl Alcohol	67-63-0	4 - 12*	400 PPM	500 PPM	400 PPM	
Butyl Cellosolve (Ethylene Glycol n-Butyl Ether)	111-76-2	13 - 18	25 PPM		50 PPM	
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing						
* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.						
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>			<b>SPECIAL HAZARD DESIGNATIONS</b>			
DOT Shipping Name: Adhesive			<b>HMIS</b>	<b>NFPA</b>	<b>HAZARD RATING</b>	
DOT Hazard Class: 3			HEALTH: 1	1	0 - MINIMAL	
Identification Number: UN 1133			FLAMMABILITY: 2	2	1 - SLIGHT	
Packaging Group: II			REACTIVITY: 0	0	2 - MODERATE	
Label Required: Flammable Liquid			PROTECTIVE		3 - SERIOUS	
			EQUIPMENT: G		4 - SEVERE	
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>			G = Eye, Hand/Skin and Respiratory Protection.			
DOT Shipping Name: Consumer Commodity						
DOT Hazard Class: ORM-D						
<b>SECTION III - PHYSICAL DATA</b>						
<b>APPEARANCE</b> White, paste-like		<b>ODOR</b> Mild		<b>BOILING POINT (°F/°C)</b> 180°F (83°C)		
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 1.41		<b>VAPOR PRESSURE (mm Hg.)</b> 0.88 mm Hg. @ 78°F (25°C)		<b>PERCENT VOLATILE BY VOLUME (%)</b> 20 - 40%		
<b>VAPOR DENSITY (Air = 1)</b> >1		<b>EVAPORATION RATE (BUAC = 1)</b> 0.6		<b>SOLUBILITY IN WATER</b> Slight		
VOC STATEMENT: Maximum VOC as manufactured: 200 Grams/Liter.						
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>						
<b>FLASH POINT</b> 82°F (28°C), P-M. C. C. (ASTM D93-80)			<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)		<b>LEL</b>	<b>UEL</b>
					1.1	10.6
<b>FIRE EXTINGUISHING MEDIA</b> Carbon dioxide, dry chemical or water.						
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Wear self-contained breathing apparatus.						
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Contact with strong oxidizers may cause fires or explosions. Carbon monoxide may be released.						

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES  
OF ENTRY:

Inhalation  Skin Contact  Eye Contact  Ingestion

EFFECT OF OVEREXPOSURE

### ACUTE:

INHALATION: May cause headache/dizziness in confined areas.  
SKIN CONTACT: May cause mild irritation (rash) to sensitive skin.  
EYE CONTACT: Possible eye irritation.  
INGESTION: May cause upset stomach.

**CHRONIC:** None currently known.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Possibly pre-existing skin and pulmonary conditions.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove patient to fresh air/well ventilated area. If necessary, consult a physician.  
EYE CONTACT: Flush with water for 15 minutes. If irritation persists, get medical attention.  
SKIN CONTACT: Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention. Wash clothes before reuse.  
INGESTION: Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Avoid contact with any source of ignition.

INCOMPATIBILITY  
(MATERIALS TO AVOID) Liquid oxygen systems, liquid sodium, gaseous fluorine, strong oxidizers.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	N/A

## SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED  
Contain liquid with sand, earth, or other absorbent material. Use normal good housekeeping procedures.

WASTE DISPOSAL METHOD  
Follow all Local, State and Federal regulations. Consult disposal expert.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)  
None required with normal ventilation. Avoid breathing of fumes. If used in a confined area, an appropriate respirator may be necessary.

VENTILATION  
Provide adequate ventilation. (Normal ventilation is adequate.)

PROTECTIVE GLOVES Rubber or polyethylene	EYE PROTECTION Chemical goggles
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OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES  
Wear protective gloves to prevent possible skin absorption and dermatitis. Keep out of reach of children.

## SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING  
Store in the shade, away from heat or open flame. Close container after use.

OTHER PRECAUTIONS  
Follow all precautionary information given on container label and product bulletins. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



# Material Safety Data Sheet

## Section 1 Product and Company Identification

Product Name: **E-Z Break Aerosol Anti-Seize, Copper Grade**  
Revision #: 2.0 Date Prepared: July 23, 2007 Date Revised:

**Manufacturer:**

**LA-CO INDUSTRIES, Inc. *Markal Co.***

1201 Pratt Blvd.

Elk Grove Village, IL, USA 60007-5746

Information Telephone: 847-956-7600

Emergency Telephone: Call CHEMTREC

USA 800-424-9300

International (Call Collect) 1-703-527-3887

**Chemical Formula:** Mixture

**CAS No.:** Not Applicable. **Derivation:** Not Applicable.

**Synonyms:** Not Applicable.

**General Use:** High Temperature Anti-Seize Lubricating Compound.

**Supplier/Importer:**

## Section 2 Composition/Information on Ingredients

<u>Ingredient</u>	<u>CAS No.</u>	<u>%</u>
Copper <sup>1,3,4,5,6</sup> ACGIH: TWA (dust) = 1 mg/m <sup>3</sup> OSHA: TWA (dust) = 1 mg/m <sup>3</sup> EPA: CERCLA RQ = 5000 lbs.; EPCRA sec. 313 de minimus concentration = 1.0%	7440-50-8	5 - 8
Aluminum <sup>1,3,5,6</sup> ACGIH: TWA (dust) = 10 mg/m <sup>3</sup> OSHA: TWA (dust) = 15 mg/m <sup>3</sup>	7429-90-5	1 - 3
Heptane <sup>3,4,5</sup> ACGIH: TLV-TWA = 400 ppm OSHA: PEL-TWA = 500 ppm	142-82-5	20 -26
Propane <sup>3,4,5</sup> ACGIH: TLV-TWA = 2500 ppm OSHA: PEL-TWA = 1000 ppm	74-98-6	15 - 21
N-Butane <sup>3,4,5</sup> ACGIH: TLV-TWA = 800 ppm OSHA: PEL-TWA = 800 ppm	106-97-8	5 - 8

(For Section 2 footnotes: See Section 15)

## Section 3 Hazards Identification

**EMERGENCY OVERVIEW:** Copper colored paste.

**POTENTIAL HEALTH EFFECTS**

**Primary Exposure Routes:** Eyes

**Acute Effects**

**Eyes:** May cause minor eye discomfort from direct contact.

**Skin:** Not applicable.

**Ingestion:** May lead to gastro-intestinal irritation.

**Inhalation:** Exposure to high concentrations of vapors may cause drowsiness, breathing difficulty, respiratory irritation or headaches. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

**Chronic Effects**

<b>Product Name:</b> E-Z Break Aerosol Anti-Seize, Copper Grade		
<b>Revision #:</b> 2.0	<b>Date Prepared:</b> July 23, 2007	<b>Date Revised:</b>

**Eyes:** Not Determined.  
**Skin:** Not Determined.  
**Ingestion:** Not Determined.  
**Inhalation:** Not Determined.  
**Carcinogenicity:** Not Applicable.  
**Target Organ Effects:** Not Applicable.  
**Medical Conditions Aggravated by Long-Term Exposure:** Not Determined.  
**Other Information:** Not Applicable.

## Section 4 First Aid

**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes.  
**Skin Contact:** Wash exposed skin with soap and water.  
**Ingestion:** If large amounts are swallowed, consult a physician. Do not induce vomiting.  
**Inhalation:** If adverse effects occur, remove to uncontaminated area. Get medical attention.  
**Other Information:** Not Applicable

## Section 5 Fire Fighting Measures

**Flash Point (method):** <-0°F / <-18°C  
**Autoignition Temperature:** Not Determined.  
**LEL:** Not Determined. **UEL:** Not Determined.  
**Flammability Classification:** Class B  
**Extinguishing Media:** Dry chemical, carbon dioxide (CO<sub>2</sub>), halogenated agents, foam, steam, or water fog.  
**Hazardous Combustion Products:** Carbon monoxide, carbon dioxide and other harmful products.  
**Unusual Fire or Explosion Hazards:** Not applicable.  
**Fire-Fighting Instructions/Equipment:** Keep personnel removed and upwind of any fire. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

## Section 6 Accidental Release Measures

**Caution:** Spill area may be slippery. Use recommended personal protective equipment (see Section 8).  
**Small Spill:** Scrape up, remove residue.  
**Large Spill:** Contain on an absorbent material (e.g., sand, sawdust, dirt, clay). Remove residue. Keep out of sewers and waterways.  
**Other Information:** Ventilate the area.

## Section 7 Handling and Storage

**Handling Precautions:** Use recommended personal protective equipment (see Section 8). Wash thoroughly after handling. Vapors may ignite explosively. Prevent buildup of vapors. Keep from sparks, heat, flame, or other heat sources. Do not smoke. Turn off pilot lights, heaters, electric motors, and other sources of ignition during use and until all vapors are gone. Do not puncture or incinerate container.  
**Storage Requirements:** Store away from incompatible chemicals (see Sec. 10). Store in a cool, dry area.

## Section 8 Exposure Controls/Personal Protection

<b>Product Name:</b> E-Z Break Aerosol Anti-Seize, Copper Grade		
<b>Revision #:</b> 2.0	<b>Date Prepared:</b> July 23, 2007	<b>Date Revised:</b>

**Eye/Face Protection:** Safety glasses or goggles recommended.  
**Skin/Hand Protection:** Not applicable.  
**Respiratory Protection:** Not applicable.  
**Other Equipment:** Eye wash and safety shower.  
**Engineering Controls:** Normal room ventilation. Local exhaust in confined areas.  
**Administrative Controls:** Users of this product must be properly trained and qualified in its use.  
**Other Information:** Not applicable.

## Section 9 Physical and Chemical Properties

**Appearance/Physical State:** Aerosol – pressurized liquid. Copper to silver/gray colored paste.  
**Odor:** Oil-like.  
**Odor Threshold (ppm):** Not Determined.  
**Specific Gravity (H<sub>2</sub>O = 1):** 0.855 @15 C  
**Solubility - Water:** Insoluble  
- Fat: Soluble  
**Coefficient of Water/Oil Solubility:** <<1  
**Partition Coefficient (n-octanol/water):** >>1  
**pH:** Not applicable.  
**Melting Point:** Not Determined.  
**Boiling Point:** Not Determined.  
**Vapor Pressure (mm Hg at 20<sup>0</sup>C):** Approximately 50 psig  
**Vapor Density (Air = 1):** Not determined.  
**Evaporation Rate:** Faster than ether  
**V.O.C.:** 44%(w/w)  
**Flash Point (method):** (see Section 5)  
**Autoignition Temperature:** (see Section 5)  
**Flammability Classification:** (see Section 5)  
**Unusual Fire or Explosion Hazards:** (see Section 5)  
**Oxidizing Properties:** Not Applicable.  
**Other Information:** None.

## Section 10 Stability and Reactivity

**Chemical Stability:** Stable  
**Hazardous Polymerization:** Will Not Occur  
**Conditions to Avoid:** None Known.  
**Chemicals to Avoid:** Oxidizers  
**Hazardous Decomposition Products (non-thermal):** Not Determined.

## Section 11 Toxicological Information

**Sensitization to Product:** Not Applicable.  
**Irritancy of Product:** Not applicable.  
**Reproductive Toxicity:** Not Applicable.  
**Teratogenicity:** Not Applicable.  
**Mutagenicity:** Not Applicable.

Further hazard information, if applicable, may be found in Section 3. Toxicological information regarding individual ingredients, if applicable, may be found in Section 2.

<b>Product Name:</b> E-Z Break Aerosol Anti-Seize, Copper Grade		
<b>Revision #:</b> 2.0	<b>Date Prepared:</b> July 23, 2007	<b>Date Revised:</b>

## Section 12 Ecological Information

**Mobility:** Not Determined.  
**Degradability:** Not Determined.  
**Accumulation:** Not Determined.  
**Ecotoxicity:** Not Determined.  
**Other Adverse Effects:** Not Determined.

## Section 13 Disposal Considerations

Dispose of in accordance with all applicable regulations.

## Section 14 Transport Information

### D.O.T. (U.S.)

**Proper Shipping Name:** Consumer Commodity

**Hazard Class or Division:** ORM-D

**Hazard Label:** Not Regulated.

**I.D. Number:** Not Regulated.

**TDG (Canada):** Not Regulated.

**IATA:**(Domestic Air) Consumer Commodity, ID 8000, Class 9, Miscellaneous Label, Packing Instruction: 910.

**IATA:** (International Air) Proper Shipping Name: Aerosols, Flammable, N.O.S.; Class: 2.1; UN1950; Packing Instruction: Y203; Authorization: LTD. QTY.; FLAMMABLE GAS label required on box.

**IMDG:** (WATER) Proper Shipping Name: Aerosol Product, LTD QTY, IMDG Class 2, Page 2102, UN1950, Packing Group II, Marine Pollutant: Yes

### Australian Code for the Transport of Dangerous Goods

**Dangerous Goods Class and Subsidiary Risk:** Not Determined.

## Section 15 Regulatory Information

### **Footnotes for Section 2:**

- 1 Subject to the reporting requirements of SARA Title III, Section 313.
- 2 Appears on the California Safe Drinking Water and Toxic Enforcement Act (Prop. 65) Substances List.
- 3 Appears on the Massachusetts Substances List.
- 4 Appears on the New Jersey Right-To-Know Hazardous Substances List.
- 5 Appears on the Pennsylvania Hazardous Substances List.
- 6 Appears on the Canadian WHMIS Ingredient Disclosure List.

### U.S.A.

**OSHA Hazard Status:** This product is not considered to be hazardous as defined by the U.S. OSHA HCS (29 CFR 1910.1200).

**EPA SARA sec. 311/312 Hazard Categories:** Not Applicable.

**Toxic Substances Control Act (TSCA):** All ingredients contained in this product are listed on the U.S. EPA TSCA Chemical Substance Inventory.

**HMIS Rating:** Health 1, Flammability 4, Reactivity 1

**NFPA Rating:** Health 1, Flammability 4, Reactivity 1

**U.S. Military Specifications:** Meets Mil. Spec. A-907E.

### CANADA

<b>Product Name:</b>	<b>E-Z Break Aerosol Anti-Seize, Copper Grade</b>
<b>Revision #:</b> 2.0	<b>Date Prepared:</b> July 23, 2007 <b>Date Revised:</b>

**WHMIS Classification:** A - Compressed Gas  
B5 - Flammable Aerosol

**Domestic Substances List (DSL):** All ingredients contained in this product are listed on the Canadian EPA (CEPA) Domestic Substances List (DSL).

**E.U.**

**European Inventory of Existing Chemical Substances (EINECS):** All ingredients contained in this product are listed on the European Inventory of Existing Chemical Substances (EINECS).

**Categories of Danger (Labeling Information):** Extremely Flammable, Toxic

**Risk (R) Phrases:** R12 Extremely Flammable

**Safety (S) Phrases:** S1/2: Keep locked up and out of reach of children  
S9: Keep container in a well ventilated place  
S16: Keep away from sources of ignition – no smoking  
S23/24/25: Do not breathe spray and avoid contact with skin and eyes  
S51: Use only in well ventilated areas

Further regulatory information regarding individual ingredients, if applicable, may be found in Section 2.

This product has been classified in accordance with the hazard criteria of the U.S. OSHA Hazard Communication Standard, the Canadian WHMIS Controlled Products Regulations, and British CHIP2 regulation 6. This MSDS contains the information required by the above regulations and conforms to ANSI Z400.1-1993.

<b>Section 16</b>	<b>Other Information</b>
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**MSDS Prepared By:** Director of Chemical Safety

**The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.**



(000000-000000- -500605 ) | DATE OF ISSUE | SUPERSEDES |  
 CA ONLY | 04/02/99 | / / |

SECTION I - GENERAL INFORMATION

-----  
 CHEMICAL NAME & SYNONYMS | TRADE NAME & SYNONYMS  
 GREASE STICK | BLUE PAINT STICK  
 -----

CHEMICAL FAMILY : | FORMULA  
 LINSEED OIL BASED | X <--MIXTURE  
 -----

MANUFACTURE'S NAME:  
 LACO Industries, INC.  
 -----

ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE)  
 1201 Pratt Blvd.  
 Eld Grove Villiage, IL 60  
 007  
 -----

PREPARED BY: | PRODUCT CODE NUMBER | EMERGENCY TELEPHONE NUMBER  
 B ABBOTT | 500605 | 972-438-1381  
 -----

SECTION II - HAZARDOUS INGREDIENTS

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

-----  
 CHEMICAL NAME (INGREDIENTS) :  
 LINSEED OIL  
 HAZARD----->NO DATA | TLV--->NO DATA | PEL--->NO DATA |  
 STEL(TWA)\*->NO DATA | CAS#-->8001-26-1 | |  
 -----

SECTION III - PHYSICAL DATA

BOILING PT. (F) | NO DATA | SPEC. GRAVITY (H20=1) | >1  
 -----

VAPOR PR. (MM HG) | NO DATA | COLOR | BLUE  
 -----

VAPOR DENSITY | NO DATA | ODOR | MILD  
 -----

(CONTINUED) - SECTION III - PHYSICAL DATA

PH. @ 100%	NO DATA	CLARITY	NO DATA
% VOLATILE BY VOL	NO DATA	EVAPORATION RATE ( BU A/C = 1 )	NO DATA
H2O SOLUBILITY	INSOLUBLE		
VISCOSITY	NO DATA		

SECTION IV - FIRE AND EXPLOSION HAZARD

FLASH POINT: 400F NO DATA	FLAMMABLE LIMITS NO DATA	LEL	UEL
EXTINGUISHING MEDIA "ALCOHOL" X <--FOAM	DRY X <--CO2	WATER <--SPRAY	<--OTHER

SPECIAL FIRE FIGHTING PROCEDURES  
 FIREFIGHTERS SHOULD WEAR A SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE GEAR.

UNUSUAL FIRE AND EXPLOSION HAZARDS  
 RAGS AND WASTE PAPER CONTAINING THIS PRODUCT MAY BURN SPONTANEOUSLY. STORE WIPING RAGS CONTAINING THIS PRODUCT IN METAL CONTAINERS WITH TIGHT LIDS.

AEROSOL LEVEL (NFPA 30B) :

NFPA HAZARD RATING (0=INSIGNIFICANT;1=SLIGHT;2=MODERATE;3=HIGH;4=EXTREME):  
 1 <--HEALTH 1 <--FLAMMABILITY 0 <--REACTIVITY 0 <--SPECIAL

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE:  
 NO DATA

EFFECTS OF OVEREXPOSURE :  
 - ACUTE - (SHORT TERM EXPOSURE)  
 EYES - MAY CAUSE MILD EYE IRRITATION



(CONTINUED) - SECTION V - HEALTH HAZARD DATA

SKIN - NO DATA  
INGESTION - NO DATA  
INHALATION - NO DATA

-----  
NO DATA - CHRONIC - (LONG TERM EXPOSURE)

-----  
PRIMARY ROUTE OF ENTRY: <-- INHALATION <-- INGESTION <-- ABSORPTION

EMERGENCY & FIRST AID PROCEDURES  
INHALATION :  
NO DATA

-----  
EYE CONTACT:  
FLUSH WITH WATER

-----  
SKIN CONTACT:  
USE GOOD INDUSTRIAL HYGIENE AND WASH HANDS AFTER USE.

-----  
INGESTION :  
NO DATA

-----  
NOTES TO PHYSICIAN :  
NO DATA

-----  
SECTION VI - TOXICITY INFORMATION

-----  
PRODUCT CONTAINS CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN BY:

IARC <--YES NTP <--YES OSHA <--YES ACGIH <--YES OTHER <--YES  
X<--NO NTP X<--NO OSHA X<--NO ACGIH X<--NO OTHER X<--NO

-----  
NO DATA

SECTION VII - REACTIVITY DATA

-----  
STABILITY | X <--STABLE <--UNSTABLE | CONDITIONS TO AVOID  
-----

NO DATA

-----  
INCOMPATIBILITY (MATERIALS TO AVOID) :  
OXIDIZERS

-----  
HAZARDOUS DECOMPOSITION PRODUCTS  
NO DATA

-----  
HAZARDOUS | WILL NOT MAY | CONDITIONS TO AVOID  
POLYMERIZATION | X <--OCCUR <--OCCUR |  
-----

SECTION VIII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:  
SWEEP OR SCRAPE UP. IF MELTED, ALLOW TO HARDEN AND SCRAPE UP.

-----  
WASTE DISPOSAL METHOD(S) :  
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

-----  
NEUTRALIZING AGENT :  
NO DATA

SECTION IX - SPECIAL PROTECTION INFORMATION

-----  
REQUIRED VENTILATION :

NO DATA  
-----

(CONTINUED) - SECTION IX - SPECIAL PROTECTION INFORMATION

---

RESPIRATORY PROTECTION :  
NO DATA

---

GLOVE PROTECTION :  
NO DATA

---

EYE PROTECTION :  
NO DATA

---

OTHER PROTECTION :  
NO DATA

---

SECTION X - STORAGE AND HANDLING INFORMATION

---

STORAGE TEMPERATURE	INDOOR	HEATED	REFRIGERATED	OUTDOOR
MAX: 100      MIN: 35				

---

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING  
STORE IN A COOL DRY AREA

---

OTHER PRECAUTIONS  
KEEP OUT OF REACH OF CHILDREN. READ THE ENTIRE  
LABEL BEFORE USING THE PRODUCT. FOLLOW THE LABEL  
DIRECTIONS.

---

SECTION XI - REGULATORY INFORMATION

---

CHEMICAL NAME	C.A.S NUMBER	UPPER % LIMIT
N/A		

---

(CONTINUED) - SECTION XI - REGULATORY INFORMATION

THOSE INGREDIENTS LISTED ABOVE ARE SUBJECT TO THE REPORTING REQUIRMENTS OF 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

IF UE (USE EXEMPTION) APPEARS UNDER UPPER % LIMIT, END USERS ARE EXEMPT FROM NOTIFICATION BECAUSE THE PRODUCT IS USED AND LABELED FOR ROUTINE JANITORIAL WORK, OR THE PRODUCT IS USED AND LABELED FOR FACILITY GROUNDS MAINTENANCE (SUCH AS FERTILIZERS AND HERBICIDES), OR THE PRODUCT IS USED AND LABELED FOR MAINTAINING MOTOR VEHICLES.

CALIFORNIA PROPOSITION 65

WARNING: THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE (1)CANCER OR (2)BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

NONE

SECTION XII - TRANSPORTATION \* (FOR FUTURE USE)

LABELS | LIMITED QTY

UNIT CONTAINER

DOT SPS CONTAINER | NET EXPLOSIVE WT.

AEROSOL PROPELLANT(S)

SECTION XIII - REFERENCES

THE INFORMATION FOUND HEREIN HAS BEEN TRANSCRIBED FROM LA-CO'S MSDS FOR THEIR PAINT STICKS. REV DATE 8/6/96 ISSUED 3/31/99.

\* SHORT TERM EXPOSURE LIMIT (TWA) LISTED AS FINAL RULE LIMITS PUBLISHED IN THE FEDERAL REGISTER/VOL. 54 NO. 12, 1-19-89

THE INFORMATION CONTAINED HERIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED

(CONTINUED) - SECTION XIII - REFERENCES

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REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

LACO Industries, INC. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STORAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL. USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.



# Material Safety Data Sheet

## Section 1 Product and Company Identification

Product Name:

**COOL GEL**

Revision #: 1.4

Date Prepared: November 3, 1998

Date Revised: June 25, 2007

Manufacturer:

**LA-CO INDUSTRIES, Inc./Markal  
Co.**

1201 Pratt Blvd.

Elk Grove Village, IL, USA 60007-5746

Information Telephone: 847-956-7600

Emergency Telephone: Call CHEMTREC

USA 800-424-9300

International (Call Collect) 1-703-527-3887

Chemical Formula: Mixture

CAS No.: Not Applicable. Derivation: Not Applicable.

Synonyms: Not Applicable.

General Use: Heat Dissipating Gel

Supplier/Importer:

## Section 2 Composition/Information on Ingredients

Ingredient

CAS No.

%

No Hazardous ingredients according to the U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200, Canadian WHMIS regulations, British CHIP2 regulation 6, and Australian Regulations for the Control of Workplace Hazardous Substances.

## Section 3 Hazards Identification

**EMERGENCY OVERVIEW:** No adverse effects expected.

### POTENTIAL HEALTH EFFECTS

Primary Exposure Routes:

Acute Effects

Eyes: Not applicable.

Skin: Not applicable.

Ingestion: Not applicable.

Inhalation: Not applicable.

### Chronic Effects

Eyes: Not applicable.

Skin: Not applicable.

Ingestion: Not applicable.

Inhalation: Not applicable.

Carcinogenicity: Not Applicable.

Target Organ Effects: Not Applicable.

Medical Conditions Aggravated by Long-Term

Exposure: Not Determined.

Other Information: Not Applicable..

## Section 4

### First Aid

Eye Contact: Not applicable.

Skin Contact: Not applicable.

Ingestion: Not applicable.

Inhalation: Not applicable.

Other Information: Not applicable.

## Section 5

### Fire Fighting Measures

Flash Point (method): Not applicable.

Autoignition Temperature: Not applicable.

**Product Name:**

**COOL GEL**

**Revision #:** 1.4

**Date Prepared:** November 3, 1998

**Date Revised:** June 25, 2007

**LEL:** Not applicable. **UEL:** Not applicable.  
**Flammability Classification:** Not applicable.  
**Extinguishing Media:** Not applicable.  
**Hazardous Combustion Products:** Not applicable.  
**Unusual Fire or Explosion Hazards:** Not applicable.  
**Fire-Fighting Instructions/Equipment:** Not applicable.

## Section 6 Accidental Release Measures

Use recommended personal protective equipment (see Section 8). Wipe or scoop up.

## Section 7 Handling and Storage

**Handling Precautions:** Not applicable.  
**Storage Requirements:** Not applicable.

## Section 8 Exposure Controls/Personal Protection

**Eye/Face Protection:** Suitable for related activities where this product is used.  
**Skin/Hand Protection:** Suitable for related activities where this product is used.  
**Respiratory Protection:** Suitable for related activities where this product is used.  
**Other Equipment:** Suitable for related activities where this product is used.  
**Engineering Controls:** Suitable for related activities where this product is used.  
**Administrative Controls:** Users of this product must be properly trained and qualified in its use.  
**Other Information:** None Known.

## Section 9 Physical and Chemical Properties

<b>Appearance/Physical State:</b> Clear gel.	<b>Solubility - Water:</b> Soluble
<b>Odor:</b> None.	- <b>Fat:</b> Insoluble
<b>Odor Threshold (ppm):</b> Not applicable.	<b>Coefficient of Water/Oil Solubility:</b> >>1
<b>Specific Gravity (H<sub>2</sub>O = 1):</b> 1	<b>Partition Coefficient (n-octanol/water):</b> <<1
<b>pH:</b> 7	<b>Flash Point (method):</b> (see Section 5)
<b>Melting Point:</b> 32°F / 0°C	<b>Autoignition Temperature:</b> (see Section 5)
<b>Boiling Point:</b> 212°F / 100°C	<b>Flammability Classification:</b> (see Section 5)
<b>Vapor Pressure (mm Hg at 20°C):</b> Negligible	<b>Unusual Fire or Explosion Hazards:</b> (see Section 5)
<b>Vapor Density (Air = 1):</b> <1	<b>Oxidizing Properties:</b> Not Applicable.
<b>Evaporation Rate (n-BuAc=1):</b> <<1	<b>Other Information:</b> None.
<b>V.O.C.:</b> 0%(w/w), 0%(v/v), 0 lbs./gal.(U.S.), 0 kg/l	

## Section 10 Stability and Reactivity

**Chemical Stability:** Stable  
**Hazardous Polymerization:** Will Not Occur  
**Conditions to Avoid:** None Known.  
**Chemicals to Avoid:** Any water reactive chemicals.  
**Hazardous Decomposition Products (non-thermal):** Not Determined.

## Section 11 Toxicological Information



**Product Name:**

**COOL GEL**

**Revision #:** 1.4

**Date Prepared:** November 3, 1998

**Date Revised:** June 25, 2007

**Sensitization to Product:** Not Applicable.

**Irritancy of Product:** Not applicable.

**Reproductive Toxicity:** Not Applicable.

**Teratogenicity:** Not Applicable.

**Mutagenicity:** Not Applicable.

Further hazard information, if applicable, may be found in Section 3. Toxicological information regarding individual ingredients, if applicable, may be found in Section 2.

## Section 12 Ecological Information

**Mobility:** Not applicable.

**Degradability:** Not applicable.

**Accumulation:** Not applicable.

**Ecotoxicity:** Not applicable.

**Other Adverse Effects:** Not applicable.

## Section 13 Disposal Considerations

Dispose of in accordance with all applicable regulations.

The conditions of handling, storage, and use of this product are beyond our control and may be beyond our knowledge. For this and other reasons, LA-CO Industries, Inc. does not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

## Section 14 Transport Information

### D.O.T. (U.S.)

**Proper Shipping Name:** Not Regulated.

**Hazard Class or Division:** Not Regulated.

**Hazard Label:** Not Regulated.

**I.D. Number:** Not Regulated.

**TDG (Canada):** Not Regulated.

**IATA:** Not Regulated.

**ICAO:** Not Regulated.

**IMO:** Not Regulated.

### Australian Code for the Transport of Dangerous Goods

**Dangerous Goods Class and Subsidiary Risk:** Not Regulated.

## Section 15 Regulatory Information

### **Footnotes for Section 2:**

- 1 Subject to the reporting requirements of SARA Title III, Section 313.
- 2 Appears on the California Safe Drinking Water and Toxic Enforcement Act (Prop. 65) Substances List.
- 3 Appears on the Massachusetts Substances List.
- 4 Appears on the New Jersey Right-To-Know Hazardous Substances List.
- 5 Appears on the Pennsylvania Hazardous Substances List.
- 6 Appears on the Canadian WHMIS Ingredient Disclosure List.

### U.S.A.

**OSHA Hazard Status:** This product is not considered to be hazardous as defined by the U.S. OSHA HCS (29 CFR 1910.1200).

**EPA SARA sec. 311/312 Hazard Categories:** Not Applicable.

**Toxic Substances Control Act (TSCA):** All ingredients contained in this product are listed on the U.S. EPA TSCA Chemical Substance Inventory.

**HMIS Rating:** Health 0, Flammability 0, Reactivity 0

**Product Name:**

**COOL GEL**

**Revision #:** 1.4

**Date Prepared:** November 3, 1998

**Date Revised:** June 25, 2007

**NFPA Rating:** Health 0, Flammability 0, Reactivity 0

**CANADA**

**WHMIS Status:** This product is not considered to be hazardous as defined by Canadian WHMIS Controlled Products Regulations.

**WHMIS Rating:** None.

**WHMIS Risk Phrases:** None.

**WHMIS Precautionary Statements:** None.

**Domestic Substances List (DSL):** All ingredients contained in this product are listed on the Canadian EPA (CEPA) Domestic Substances List (DSL).

**E.U.**

**European Inventory of Existing Chemical Substances (EINECS):** All ingredients contained in this product are listed on the European Inventory of Existing Chemical Substances (EINECS).

**Categories of Danger (Labeling Information):** None.

**Risk (R) Phrases:** None.

**Safety (S) Phrases:** None.

**AUSTRALIA**

**Worksafe Australia Status:** This product is not classified as hazardous according to criteria of Worksafe Australia.

**HAZCHEM Code:** None allocated.

**Poisons Schedule Number:** None allocated.

Further regulatory information regarding individual ingredients, if applicable, may be found in Section 2.

This product has been classified in accordance with the hazard criteria of the U.S. OSHA Hazard Communication Standard, the Canadian WHMIS Controlled Products Regulations, the British CHIP2 regulation 6, and the Australian NMRCWHS. This MSDS contains the information required by the above regulations and conforms to ANSI Z400.1-1993.

**Section 16**

**Other Information**

**MSDS Prepared By:** Director of Chemical Safety

**The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.**

## SAFETY DATA SHEET

### Section 1: Product and Company Identification

**Product Name:** DURA-INK® 200, DURA-INK® 10, DURA-INK® 15, DURA-INK® 25, DURA-INK® 55

**Product Code:** DURA-INK® 200 – 96916 (red), 96917 (\*black), 96915 (blue), 96914 (green), 96540 (red carded), 96541 (\*black carded).  
 DURA-INK® 10 – 96076 (\*black), 96077 (\*black carded).  
 DURA-INK® 15 – 96022 (red), 96023 (\*black), 96025 (blue), 96026 (green), 96033 (\*black carded) 96068 (red carded).  
 DURA-INK® 25 - 96222 (red), 96223 (\*black), 96233 (\*black carded) 96234 (red carded).  
 DURA-INK® 55 – 96528 (red), 96529 (\*black), 96530 (blue), 96531 (green), 96532 (red carded), 96533 (\*black carded).  
 \*Black codes I-08 and later

**Product Use:** Marker for cardboard, wood, metal, paper, ceramics, glass, leather and rubber.

**Supplier:** LA-CO Industries, Inc.  
 1201 Pratt Boulevard  
 Elk Grove Village, IL.  
 60007-5746  
 E-mail Contact: customer\_service@laco.com

**Phone:** (847) 956-7600

**Fax:** (847) 956-9885

**24-hour Emergency:** CHEMTREC: (800) 424-9300

### Section 2: Hazards Identification

Protective Clothing	NFPA Rating (USA)	EC Classification	WHMIS (Canada)	Transportation
Not Required for Normal Use		Not Classified as Dangerous	Not Controlled	Not Regulated

**Emergency Overview:** The ink inside the marker contains components which are considered flammable and hazardous by inhalation of vapors and if swallowed. Exposure to hazardous or dangerous substances is not expected when handling this product for its intended use.

**Appearance, Color and Odor:** Marker containing less than 10 mL of colored ink. Organic solvent odor.

**USA:** This product is not a hazardous material as defined by 29 CFR1910.1200, OSHA Hazard Communication Evaluation. This product meets the definition of an "article".

**Canada:** This is not a controlled product under WHMIS. This product meets the definition of a "manufactured article" and is not subject to the regulations of the Hazardous Products Act.

**European Communities (EC):** This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

**Potential Health Effects:** ACUTE (short term):

**Relevant Route(s) of Exposure:** Skin contact.

**Inhalation:** Exposure to hazardous substances by inhalation is not expected with normal use of the marker.

**Ingestion:** Not an expected route of occupational exposure. Acute oral toxicity of the component substances is low.

**Skin:** Normal use of marker will not result in harmful effects. The ink may cause irritation when in contact with the skin. Some components of the ink may be absorbed through the skin.

**Eye:** Not an expected route of occupational exposure. Liquid and concentrated vapors can irritate the eyes.

## SAFETY DATA SHEET

### Section 2: Hazards Identification, continued

**CHRONIC (long term):** see Section 11 for additional toxicological data

Long-term health effects are not expected with normal use of the marker. Prolonged or repeated contact with of the ink to skin may result in defatting and drying of skin and may result in dermatitis.

The component substance, 4-(phenylazo)benzene-1,3-diamine, present at between 1 and 2.5%, is classified in mutagenic category 3, limited evidence of possible mutagenic effects. Exposure to this substance is not expected with normal use of the marker.

**Medical Conditions Aggravated by Exposure:** Preexisting skin disorders may be aggravated by repeated exposure to the liquid in the marker.

**Interactions With Other Chemicals:** Not available

**Potential Environmental Effects:** Not available

### Section 3: Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Wt.%</u>	<u>EINECS / ELINCS</u>	<u>Symbol</u>	<u>Risk Phrases</u>
propan-1-ol	71-23-8	60 - 100	200-746-9	F, Xi	R11; R41 - R67
1-methoxypropan-2-ol	107-98-2	10 - 25	203-539-1	None	R10
Phosphoric acid, mono- and bis(2-ethylhexyl) esters	90506-69-7	2.5 - 10	291-933-4	Not classified	Not applicable
4-(phenylazo)benzene-1,3-diamine	495-54-5	1 - 2.5	207-803-7	Xn, Xi, N	Muta. Cat. 3; R68 - R22 - R38 - R50-53

See Section 16 for the full text of the R-phrases above.

### Section 4: First Aid Measures

**Inhalation:** If symptoms are experienced remove source of contamination or move victim to fresh air and obtain medical advice.

**Eye Contact:** No effects expected. If irritation occurs, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.

**Skin Contact:** No health effects expected. If irritation does occur, flush with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.

**Ingestion:** If irritation or discomfort occurs, obtain medical advice immediately.

### Section 5: Fire Fighting Measures

**Flammable Properties:** Ink contained within the markers is flammable.

**Suitable extinguishing Media:** For small fires, use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam. For large fires, use carbon dioxide, dry chemical powder, alcohol-resistant foam or polymer foam. Firefighting foams are the extinguishing agent of choice for most flammable liquid fires. Use water spray to cool fire-exposed containers.

**Unsuitable extinguishing Media:** Not available

**Explosion Data:**

**Sensitivity to Mechanical Impact:** Not applicable

**Sensitivity to Static Discharge:** Not applicable

## SAFETY DATA SHEET

### Section 5: Fire Fighting Measures, continued

**Specific Hazards arising from the Chemical:** If involved in a fire, combustion may produce toxic and irritating fumes and gases.

**Protective Equipment and precautions for firefighters:** Self-contained breathing apparatus and protective clothing should be worn. Remove all unprotected personnel.

**NFPA**

Health: 0  
Flammability: 1  
Instability: 0

### Section 6: Accidental Release Measures

**Personal Precautions:** If large volumes of liquid ink are released, wear protective gloves, goggles and clothing. Ventilate the area. Monitor the workplace air for harmful concentrations of vapors and take appropriate precautions if concentrations in air exceed workplace exposure limits.

**Environmental Precautions:** Prevent the product from entering sewers or waterways.

**Methods for Containment:** If large volumes of liquid ink are released, stop the leak if it is safe to do so. Contain spilled ink with earth, sand, or absorbent material which does not react with spilled material.

**Methods for Clean-up:** Clean up spills immediately. Shut off or extinguish all sources of ignition. Immediately soak spilled material with water. Soak up spill with absorbent material which does not react with spilled chemical. Put material in suitable, covered, labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Dispose of any contaminated, unusable product as described in Section 13 of this SDS.

### Section 7: Handling and Storage

**Handling:** Avoid breathing vapors. Do not use near sources of extreme heat and keep away from sources of ignition. Keep out of reach of children. Keep container tightly closed. Avoid contact with the skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Storage:** Store out of direct sunlight and away from heat, flames and ignition sources. Keep markers closed when not in use. Store between 4 – 49°C (40-120°F).

### Section 8: Exposure Controls/Personal Protection

**Exposure Guidelines**

Measurable airborne concentrations of the component substances, listed in Section 3, are not expected when the markers are used for their intended purpose. Consult local authorities for acceptable exposure limits.

**Exposure Controls**

**Engineering Controls:** Not required for normal use.

**Personal Protection:**

**Eye/Face Protection:** Not required for normal use. In case of accidental release of large quantities of ink, wear goggles.

**Skin Protection:** Not required for normal use. In case of accidental release of large quantities of ink, wear gloves.

**Respiratory Protection:** Not required for normal use.

**General Hygiene Measures:** Avoid breathing vapors. Do not ingest. Avoid contact of the ink to skin and eyes. Keep out of reach of children.



### SAFETY DATA SHEET

#### Section 9: Physical and Chemical Properties

<b>Physical State:</b>	Solid, containing liquid ink.	<b>Flash Point &amp; method:</b>	13°C (55°F) CC
<b>Appearance, Color and Odor:</b>	Cylindrical marker; various colors; odor of organic solvent.	<b>Autoignition Temperature:</b>	Not available
<b>Odor Threshold:</b>	Not available	<b>Flammability Limits in Air:</b>	1.7 – 13.5%
<b>pH:</b>	Not applicable	<b>Vapor Pressure:</b>	14 mmHg (of the liquid ink)
<b>Specific Gravity:</b>	0.81 (for liquid ink)	<b>Vapor Density:</b>	Not applicable
<b>Partition coefficient:</b>	Not available	<b>Evaporation Rate:</b>	Not applicable
<b>Solubility:</b>	Not applicable	<b>Boiling Point/Range:</b>	78°C (172°F)
<b>Viscosity:</b>	Not applicable	<b>Melting Point:</b>	Not available
<b>Decomposition Temperature:</b>	Not available	<b>VOC Content:</b>	81% (w/w) for liquid ink

#### Section 10: Stability and Reactivity

**Chemical Stability:** Stable at normal room temperature.

**Conditions to Avoid:** Do not use in conditions of extreme heat or near open flames.

**Incompatible Materials:** Incompatible with strong oxidizing agents.

**Hazardous Decomposition Products:** Not applicable

**Possibility of Hazardous Reactions:** Not applicable

#### Section 11: Toxicological Information

**Acute Toxicity Data** Acute toxicity data is not available for the liquid ink preparations inside the markers. The ink contains substances which are considered harmful by inhalation and if swallowed. Exposure to toxic and harmful substances by the user is not expected when the marker is used for its intended purpose.

**Other Toxicity Data**

**Carcinogenicity:** Normal use of the markers is not expected to pose the risk of exposure to carcinogenic substances.

**Irritation:** Normal use of marker will not result in harmful effects. High concentrations of vapors may cause irritation to the eyes. Ink may cause irritation in contact with skin.

**Corrosivity:** Not applicable

**Sensitization:** Not applicable

**Neurological Effects:** Not applicable with normal use of the marker.

**Genetic Effects:** Not applicable with normal use of the marker.

**Reproductive Effects:** Not applicable with normal use of the marker.

**Developmental Effects:** Not applicable with normal use of the marker.

**Target Organ Effects:** Not applicable with normal use of the marker.



## SAFETY DATA SHEET

### Section 12: Ecological Information

**Ecotoxicity:** Not available  
**Persistence/Degradability:** Not available  
**Bioaccumulation/Accumulation:** Not available  
**Mobility:** Not available

### Section 13: Disposal Considerations

**Waste Disposal Method:** Do NOT dump into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage.  
The conditions of use, storage and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, LA-CO Industries, Inc. does not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

**USA:** Dispose of in accordance with local, state and federal laws and regulations.

**Canada:** Dispose of in accordance with local, provincial and federal laws and regulations.

**EC:** Waste must be disposed of in accordance with relevant EC Directives and national, regional and local environmental control regulations. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

### Section 14: Transport Information:

**U.S. Hazardous Materials Regulation (DOT 49CFR):** Not regulated, this product conforms to small quantity exception of DOT 49CFR173.4.

**Canadian Transportation of Dangerous Goods (TDG):** Not regulated

**ADR/RID:** Not regulated

**IMDG:** Not regulated

**Marine Pollutants:** Not applicable

**ICAO/IATA:** Not regulated

### Section 15: Regulatory Information

#### USA

**TSCA Status:** All component substances are listed on the TSCA inventory.

#### **SARA Title III**

**Sec. 302/304:** None  
**Sec. 311/312:** Flammable, Chronic health  
**Sec. 313:** Not applicable  
**CERCLA RQ:** Not applicable

**California Prop 65:** To the best of our knowledge this product does not contain chemicals known to the State of California to cause cancer or reproductive harm.

**State Right-to-Know Lists :** Propan-1-ol can be found on the following state right to know lists: New Jersey, Pennsylvania and Massachusetts.  
1-methoxypropan-2-ol can be found on the following state right to know lists: New Jersey, Pennsylvania and Massachusetts.

## SAFETY DATA SHEET

### Section 15: Regulatory Information, continued

**Canada**

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

**WHMIS Classification:** Not controlled. Product meets the definition of a "manufactured article" and is not subject to the regulations of the Hazardous Products Act.  
(for workplace exposures)

**New Substance Notification Regulations:** Phosphoric acid, mono- and bis(2-ethylhexyl) esters, 90506-69-7 is not listed. All other component substances are listed on Canada's Domestic Substances List (DSL).

**NPRI Substances:** There are no NPRI reportable substances in the ink preparation.

**EC Classification for the Substance/Preparation**

**European Inventories:** All component substances are listed in EINECS.

**Symbol:** This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

### Section 16: Other Information

**Full Text of R-phrases appearing in Section 2:**

R10: Flammable.  
R11: Highly flammable.  
R22: Harmful if swallowed.  
R38: Irritating to skin.  
R41: Risk of serious damage to eyes.  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R67: Vapours may cause drowsiness and dizziness.  
R68: Possible risk of irreversible effects.

**Preparation Information:**

**Prepared by:** LEHDER Environmental Services Limited (519) 336-4101  
www.lehder.com

**Revision Date:** January 9, 2009

**Disclaimer:** While LEHDER Environmental Services Limited believes that the data set forth herein is accurate, as of the date hereof, LEHDER makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data is offered solely for your consideration, investigation and verification.

**Manufacturer Disclaimer:** The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.



# Material Safety Data Sheet

IMPORTANT NOTICE: This Material Safety Data Sheet (MSDS) is issued by LA-CO Industries, Inc. (LA-CO) in accordance with the U.S. OSHA Hazard Communication Standard, Canadian WHMIS Controlled Products Regulations, British CHIP2 regulation 6, Australian NMRCWHS and ANSI Z400.1-1993 guidelines. The information contained herein must not be altered, deleted or added to, with the exception of adding supplier/importer information in the space provided. LA-CO has no objection to its MSDS being copied if: a) the copy is made for safety-related purposes; and b) no alterations or amendments are made to the text or format of the MSDS, with the exception of adding supplier/importer information in the space provided. LA-CO does not guaranty the accuracy of any MSDS for our products which: a) is not prepared by LA-CO; b) is not authorized by LA-CO; c) is not in the format originally supplied by LA-CO; or d) has otherwise been amended or altered by a third party, with the exception of adding supplier/importer information in the space provided.

## Section 1 Product and Company Identification

Product Name:

**SLIC-TITE PASTE with PTFE**

Revision #: 1.8

Date Prepared: December 7, 1994

Date Revised: February 20, 2007

Manufacturer:

**LA-CO INDUSTRIES, Inc.** *Markal Co.*

1201 Pratt Blvd.

Elk Grove Village, IL, USA 60007-5746

Information Telephone: 847-956-7600

Emergency Telephone: Call CHEMTREC

USA 800-424-9300

International (Call Collect) 1-703-527-3887

Chemical Formula: Mixture

CAS No.: Not Applicable. Derivation: Not Applicable.

Synonyms: Not Applicable.

General Use: Pipe thread sealant for metal and plastic threads.

Supplier/Importer:

## Section 2 Composition/Information on Ingredients

Slic-Tite Paste with PTFE has been biologically evaluated and proven non-toxic and non-irritating within the meaning of the U.S. Federal Hazardous Substances Labeling Act.

No Hazardous ingredients according to the U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canadian WHMIS regulations.

(For Section 2 footnotes: See Section 15)

## Section 3 Hazards Identification

EMERGENCY OVERVIEW: None.

POTENTIAL HEALTH EFFECTS:

Primary Entry Routes: None

Acute Effects

Eyes: May cause mechanical irritation.

Skin: Not Applicable.

Ingestion: May cause nausea.

Inhalation: Not Applicable.

Chronic Effects

Eyes: Not Applicable.

Skin: Not Applicable.

Ingestion: Not Applicable.

Inhalation: Not Applicable.

**Product Name:** **SLIC-TITE PASTE with PTFE**  
**Revision #:** 1.8 **Date Prepared:** December 7, 1994 **Date Revised:** February 20, 2007

**Carcinogenicity:** Not Applicable.  
**Target Organ Effects:** Not Applicable.  
**Medical Conditions Aggravated by Long-Term Exposure:** Not Determined.  
**Other Information:** Not Applicable.  
**HMIS Rating:** Health 0, Flammability 1, Reactivity 0

## Section 4 First Aid

**Eye Contact:** Flush with water. **Inhalation:** Not Applicable.  
**Skin Contact:** Wash with soap and water. **Other Information:** Not Applicable.  
**Ingestion:** Consult physician if irritation develops.

## Section 5 Fire Fighting Measures

**Flash Point (method):** >300°F/150°C (toc) **Flammability Classification:** Not Determined.  
**Autoignition Temperature:** Not Determined. **Extinguishing Media:** Water, Carbon Dioxide,  
**LEL:** Not Determined. **UEL:** Not Determined. Chemical Foam.  
**Hazardous Combustion Products:** Hydrogen Fluoride, Perfluorocarbon olefins, oxides of carbon.  
**Unusual Fire or Explosion Hazards:** PTFE will emit Hydrogen Fluoride and perfluorocarbon olefins  
above 500°F.  
**Fire-Fighting Instructions/Equipment:** Keep personnel removed and upwind of any fire. Wear full  
fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Keep containers  
cool by spraying with water.  
**NFPA Rating:** Health 2, Flammability 1, Reactivity 0.

## Section 6 Accidental Release Measures

Use recommended personal protective equipment (see Section 8).  
**Small Spill:** Scrape up spills and place in steel container. Wash remainder with soap and water. Spill  
area may be slippery.  
**Large Spill:** Treat same as small spill.

## Section 7 Handling and Storage

**Handling Precautions:** Use recommended personal protective equipment (see Section 8). Wash  
thoroughly after handling.  
**Storage Requirements:** Store in a cool, dry area.

## Section 8 Exposure Controls/Personal Protection

**Eye/Face Protection:** Eye protection  
recommended as good work practice. **Engineering Controls:** Not Applicable.  
**Skin Protection:** None. **Administrative Controls:** Users of this product  
must be properly trained and qualified in its  
use.  
**Respiratory Protection:** None. **Other Information:** Fumes of decomposition  
(burning) are toxic.  
**Other Personal Protective Equipment:** None.

## Section 9 Physical and Chemical Properties

**Appearance/Physical State:** White  
paste/viscous liquid **pH:** Not Applicable.  
**Specific Gravity (H<sub>2</sub>O = 1):** 1.48 (12.35 lbs./gal.)

**Product Name:**

## **SLIC-TITE PASTE with PTFE**

**Revision #:** 1.8

**Date Prepared:** December 7, 1994

**Date Revised:** February 20, 2007

paste/viscous liquid.

**Odor:** Grease-like.

**Odor Threshold (ppm):** Not Determined.

**Melting Point:** Not Applicable.

**Boiling Point:** 350°F/177°C

**Vapor Pressure (mm Hg at 20°C):** Not Applicable.

**Solubility in Water:** Insoluble.

**Coefficient of Water/Oil Solubility:** <1

**Vapor Density (Air = 1):** Not Applicable.

**Evaporation Rate (n-BuAc=1):** Not Applicable.

**V.O.C.:** 0%(w/w), 0%(v/v), 0 lbs./gal.(U.S.), 0 kg/l

### **Section 10**

### **Stability and Reactivity**

**Chemical Stability:** Stable.

**Hazardous Polymerization:** Will Not Occur.

**Conditions to Avoid:** Not Applicable.

**Chemicals to Avoid:** Oxidizers, strong acids, strong alkalis, aromatic solvents, chlorinated solvents.

**Hazardous Decomposition Products:** Not Determined.

### **Section 11**

### **Toxicological Information**

**Sensitization to Product:** Not Applicable.

**Teratogenicity:** Not Applicable.

**Irritancy of Product:** Not Applicable.

**Mutagenicity:** Not Applicable.

**Reproductive Toxicity:** Not Applicable.

Toxicological information regarding individual ingredients, if applicable, may be found in Section 2.

### **Section 12**

### **Ecological Information**

Not Determined.

### **Section 13**

### **Disposal Considerations**

Dispose of in accordance with applicable federal, state, and local regulations.

### **Section 14**

### **Transport Information**

**D.O.T. (U.S.)**

**Proper Shipping Name:** Cement or compound, pipefitting, class 55.

**Hazard Class or Division:** Not Regulated.

**Hazard Label:** Not Regulated.

**I.D. Number:** Not Regulated.

**TDG (Canada):** Not Regulated.

**IATA:** Not Regulated.

**ICAO:** Not Regulated.

**IMO:** Not Regulated.

**Australian Code for the Transport of Dangerous Goods**

**Dangerous Goods Class and Subsidiary Risk:**  
Not Determined.

Product Name:

**SLIC-TITE PASTE with PTFE**

Revision #: 1.8

Date Prepared: December 7, 1994

Date Revised: February 20, 2007

## Section 15

## Regulatory Information

### Footnotes for Section 2:

- 1 Subject to the reporting requirements of SARA Title III, Section 313.
- 2 Appears on the California Safe Drinking Water and Toxic Enforcement Act (Prop. 65) Substances List.
- 3 Appears on the Massachusetts Substances List.
- 4 Appears on the New Jersey Right-To-Know Hazardous Substances List.
- 5 Appears on the Pennsylvania Hazardous Substances List.
- 6 Appears on the Canadian WHMIS Ingredient Disclosure List.

### U.S.A.

**OSHA Hazard Status:** This product is not considered to be hazardous as defined by the U.S. OSHA HCS (29 CFR 1910.1200).

**EPA SARA sec. 311/312 Hazard Categories:** Not Applicable.

**Toxic Substances Control Act (TSCA):** All ingredients contained in this product are listed on the U.S. EPA TSCA Chemical Substance Inventory.

**HMIS Rating:** Health 0, Flammability 1, Reactivity 0

**NFPA Rating:** Health 2, Flammability 1, Reactivity 0

**American Gas Association (AGA):** Meets AGA requirements 4-90. Working temperature range -40°F to 125°F. Maximum working pressure 125 psi. Use with natural gas and LP gases (vapor state only). Use on steel, galvanized steel, iron, brass, copper and aluminum.

**National Sanitation Foundation (NSF):** Certified to ANSI/NSF Standard 61.

**United States Department of Agriculture (USDA):** Authorized by USDA for use in federally inspected meat and poultry plants.

**Underwriters Laboratories (U.L.):** Classified by U.L. in U.S.A. and Canada.

Meets **U.S. Federal Specification** TT-S-1732.

### CANADA

**WHMIS Status:** This product is not considered to be hazardous as defined by Canadian WHMIS Controlled Products Regulations.

**WHMIS Rating:** None.

**WHMIS Risk Phrases:** None.

**WHMIS Precautionary Statements:** None.

**Domestic Substances List (DSL):** All ingredients contained in this product are listed on the Canadian EPA (CEPA) Domestic Substances List (DSL).

### E.U.

**European Inventory of Existing Chemical Substances (EINECS):** All ingredients contained in this product are listed on the European Inventory of Existing Chemical Substances (EINECS).

**Categories of Danger (Labeling Information):** None.

**Risk (R) Phrases:** None.

**Safety (S) Phrases:** None.

### AUSTRALIA

**Worksafe Australia Status:** This product is not classified as hazardous according to criteria of Worksafe Australia.

**HAZCHEM Code:** None allocated.

**Poisons Schedule Number:** None allocated.

Further regulatory information regarding individual ingredients, if applicable, may be found in Section 2.

This product has been classified in accordance with the hazard criteria of the U.S. OSHA Hazard Communication Standard, the Canadian WHMIS Controlled Products Regulations, the British CHIP2 regulation 6, and the Australian NMRCWHS. This MSDS contains the information required by the

**Product Name:** ***SLIC-TITE PASTE with PTFE***  
**Revision #:** 1.8      **Date Prepared:** December 7, 1994      **Date Revised:** February 20, 2007

above regulations and conforms to ANSI Z400.1-1993.

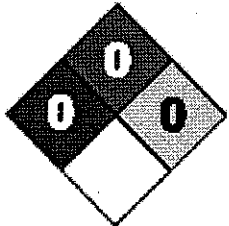
<b>Section 16</b>	<b>Other Information</b>
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**MSDS Prepared By:** Director of Chemical Safety

**The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.**



**MATERIAL SAFETY DATA SHEET**

Protective Clothing	NFPA Rating (USA)	EC Classification	WHMIS (Canada)	Transportation
Not required for normal use		Not Dangerous	Not Controlled	Not Regulated

**Section 1: Product and Company Information**

**Product Name:** Regular Soldering Flux Paste

**Product Use:** Soldering flux for copper, brass, galvanized iron, lead, zinc, tin, silver, nickel, mild steel, terne plate and malleable iron.

**Manufacturer:** LA-CO Industries, Inc.  
1201 Pratt Boulevard  
Elk Grove Village, IL.  
60007-5746

**Phone Number:** (847) 956-7600

**Fax:** (847) 956-9885

**24-hour Emergency:** CHEMTREC: (800) 424-9300

**Section 2: Composition and Ingredient Information**

**Hazardous/Dangerous Ingredients:**

Chemical Name	CAS No.	Wt. %	EINECS / ELINCS	Symbol	Risk Phrases
Hydrochloric acid	7647-01-0	10 – 20	231-595-7	C, Xi	R34, R37
2-aminoethanol	141-43-5	7 – 13	205-483-3	Xn, C	R20/21/22; R34
Ammonium Chloride	12125-02-9	7 – 13	235-186-4	Xn, Xi	R22, R36
Stearic Acid	57-11-4	1 – 5	200-313-4	None	None

**Note:** See Section 8 of this MSDS for exposure limit data for these ingredients.  
See Section 16 for the full text of the R-phrases above.

**MATERIAL SAFETY DATA SHEET****Section 3: Hazards Identification****Preparation Hazards and Classification:**

Normal use of this product is not expected to cause any harm or irritation to the user.

USA: This product is not a hazardous material as defined by 29 CFR 1910.1200, OSHA Hazard Communication Evaluation.

Canada: This is not a controlled product under WHMIS.

European Communities (EC): This preparation is not classified as dangerous according to Directive 1999/45/EC and its amendments.

**Appearance, Color and Odor:** White colored paste

**Primary Route(s) of Exposure:** Inhalation, Ingestion

**Potential Health Effects:** **ACUTE (short term): see Section 8 for exposure controls**

**Inhalation:** Inhalation of vapors is not expected with normal use. Over exposure to high vapor concentrations may cause nasal and respiratory irritation, sore throat, coughing and difficulty breathing. High concentrations may also cause dizziness, headache, nausea, vomiting or in extreme cases, unconsciousness or asphyxiation.

**Ingestion:** Not an expected route of occupational exposure. Low oral toxicity. Ingestion of large quantities may cause abdominal and chest pain, nausea, vomiting, diarrhea or dizziness. Aspiration into the lungs may occur during ingestion of large quantities or vomiting, resulting in lung injury.

**Skin:** This product has been tested and found to be non-irritating to skin.

**Eye:** This product has been tested and found to be non-irritating to eyes. May be irritating as a foreign object in the eye.

**CHRONIC (long term): see Section 11 for additional toxicological data**

Chronic effects are not expected with normal use. Prolonged or repeated over exposure to high vapor concentrations may cause damage to the respiratory tract or lungs.

**Medical Conditions**

Not available

**Aggravated by Exposure:****Section 4: First Aid Measures**

**Inhalation:** No health effects expected. If symptoms are experienced remove source of contamination or move victim to fresh air and obtain medical advice.

**Eye Contact:** No health effects expected. If material becomes lodged in the eye, do not allow victim to rub eye(s). Let the eye(s) water naturally for a few minutes. Have victim look right and left, then up and down. If particle does not dislodge, flush with lukewarm, gently flowing water for 5 minutes or until removed, while holding eyelid(s) open. If irritation occurs, obtain medical attention. DO NOT attempt to manually remove anything stuck to the eye.

**Skin Contact:** No health effects expected. If irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed.

**Ingestion:** No health effects expected. If irritation or discomfort occurs, obtain medical advice.





## MATERIAL SAFETY DATA SHEET

### Section 5: Fire Fighting Measures

- Extinguishing Media:** Use water spray, carbon dioxide, dry chemical powder or foam.
- Unusual Fire and Explosion Hazards:** Sensitivity to mechanical impact: Not sensitive  
Sensitivity to static discharge: Not sensitive
- Fire Fighting Instructions:** Self-contained breathing apparatus and protective clothing should be worn.
- Hazardous Combustion Products:** Carbon dioxide, carbon monoxide, ammonia, hydrochloric acid fumes, smoke and irritating and toxic fumes may be formed.

### Section 6: Accidental Release Measures

- Personal Precautions:** Wear protective equipment. Keep unauthorized personnel away.
- Environmental Precautions:** Do not allow product to reach sewage systems or ground water.
- Methods for Containment:** Stop the spill if it is safe to do so. Contain spilled flux with earth, sand, or absorbent material which does not react with spilled material.
- Methods for Clean-up:** Scrape or scoop up the spilled material. Put material in suitable, labeled container. Flush area with water.

### Section 7: Handling and Storage

- Handling** Avoid breathing fumes. Do not ingest. Keep away from children. Use this material with adequate ventilation. Keep container closed when not in use.
- Storage:** Store in a cool, dry area. Keep containers tightly closed when not in use. Store away from incompatible materials

## MATERIAL SAFETY DATA SHEET

### Section 8: Exposure Controls and Personal Protection

#### Exposure Limits

<u>Ingredient</u>	<u>ACGIH TLV</u> <u>(8-hr. TWA)</u>	<u>U.S. OSHA PEL</u> <u>(8-hr. TWA)</u>	<u>Ontario (Canada)</u> <u>TWAEV</u>	<u>UK OEL</u> <u>(8-hr. TWA)</u>
Hydrochloric acid	2 ppm CEL	5 ppm (7 mg/m <sup>3</sup> ) CEL	2 ppm CEV	1 ppm (2 mg/m <sup>3</sup> ); 5 ppm (8 mg/m <sup>3</sup> ) STEL
2-aminoethanol	3 ppm 6 ppm STEL	3 ppm (6 mg/m <sup>3</sup> )	3 ppm (7.5 mg/m <sup>3</sup> ); 6 ppm (15 mg/m <sup>3</sup> ) STEV	1 ppm (2.5 mg/m <sup>3</sup> ); 3 ppm (7.6 mg/m <sup>3</sup> ) STEL
Ammonium Chloride	10 mg/m <sup>3</sup> (fume); 20 mg/m <sup>3</sup> STEL	Not established	10 mg/m <sup>3</sup> ; 20 mg/m <sup>3</sup> STEV	10 mg/m <sup>3</sup> (fume); 20 mg/m <sup>3</sup> STEL
Stearic Acid	Not established	Not established	Not established	Not established

CEL = Ceiling Exposure Limit  
 CEV = Ceiling Exposure Value  
 STEV = Short Term Exposure Value  
 STEL = Short Term Exposure Limit

#### Exposure Controls

##### Engineering Controls:

Provide adequate ventilation/local exhaust to keep vapor concentrations below the exposure limits listed above.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 or Canadian Standards Association (CSA) Standard Z94.4-93 must be followed whenever workplace conditions warrant a respirator's use.

##### Personal Protection:

**Respiratory Protection:** Not required for normal use.

**Skin Protection:** Not required for normal use. Wear appropriate protective gloves and clean, body-covering clothing, when workplace conditions warrant their use.

**Eye Protection:** Not required for normal use. Wear appropriate safety goggles, when workplace conditions warrant their use.

##### Other Protective Equipment:

If used during welding, wear appropriate equipment required for welding operations.

##### Hygiene Measures:

Avoid breathing fumes. Keep container tightly closed when not in use. Wash hands thoroughly after handling this material. Maintain good housekeeping.

**MATERIAL SAFETY DATA SHEET**

**Section 9: Physical and Chemical Properties**

<b>Physical State:</b>	Paste	<b>Vapor Pressure:</b> (mm Hg @ 25°C)	Not available
<b>Appearance:</b>	White	<b>Vapor Density:</b> (Air = 1)	Not available
<b>pH:</b>	6.5 – 7	<b>Solubility in Water:</b>	Water soluble Fat insoluble
<b>Relative Density:</b> (water = 1)	1.1	<b>Water / Oil distribution coefficient:</b>	Not available
<b>Boiling Point:</b>	Not available	<b>Odor Type:</b>	Low odor
<b>Freezing Point:</b>	Not available	<b>Odor Threshold:</b>	Not available
<b>Viscosity:</b>	Not available	<b>Evaporation Rate:</b> (n-Butyl Acetate = 1)	Not available
<b>Oxidizing Properties:</b>	Not available	<b>Auto Ignition Temperature (°C):</b>	Not available
<b>Flash Point and Method:</b>	>204°C (400°F) TOC	<b>Flammability Limits (%):</b>	Not available

**Section 10: Stability and Reactivity**

<b>Stability:</b>	Stable at normal temperature
<b>Conditions to Avoid:</b>	No known conditions to avoid.
<b>Incompatible Materials:</b>	Incompatible with strong oxidizing agents, strong acids, bases, amines, carbonates, aldehydes, acid chlorides and anhydrides, aluminum, cellulose nitrate, cyanides, sulfides, and potassium chlorate.
<b>Hazardous Decomposition Products:</b>	Products of incomplete combustion may include ammonia, carbon dioxide and dense smoke. Heat can cause evolution of gaseous hydrogen chloride.
<b>Possibility of Hazardous Reactions:</b>	Not available
<b>Other Reactivity Concerns:</b>	Not available

## MATERIAL SAFETY DATA SHEET

### Section 11: Toxicological Information

**Acute Toxicity Data**

<u>Ingredient</u>	<u>LD<sub>50</sub> Oral</u> (mg/kg)	<u>LD<sub>50</sub> Dermal</u> (mg/kg)	<u>LC<sub>50</sub> Inhalation</u> (4 hrs.)
Hydrochloric acid	238 - 277 (female rat) 700 (rat)	> 5 010 (rabbit)	544 ppm (mouse) 1 562 ppm (rat)
2-aminoethanol	1 720 (rat)	1 000 (rabbit)	1 210 mg/m <sup>3</sup> (mouse)
Ammonium Chloride	1 300 (mouse) 1 650 (rat)	Not available	Not available
Stearic Acid	> 5 000 (rat)	> 5 000 (rabbit)	Not available

**Chronic Toxicity Data**

**Carcinogenicity:**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<u>Ingredient</u>	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>
Hydrochloric acid	A4	Group 3	Not listed
2-aminoethanol	Not listed	Not listed	Not listed
Ammonium Chloride	Not listed	Not listed	Not listed
Stearic Acid	Not listed	Not listed	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)

A4 – Not Classifiable as a Human Carcinogen.

IARC: (International Agency for Research on Cancer)

Group 3 – The agent is not classifiable as to its carcinogenicity in humans.

NTP: (National Toxicology Program)

**Other Toxicity Data:**

Regular Soldering Flux Paste Toxicity Data: LD<sub>50</sub> Oral: > 5 gm/kg (rat)

(Tested by Rosner-Hixson Laboratories; August 30, 1962)

**Irritation:**

The product is essentially non-irritating to the eyes and skin. Application of the product to areas of intact and abraded rabbit skin produced no signs of skin irritation (Rosner-Hixson Laboratories; Aug 30, 1962).

**Sensitization:**

Not applicable

**Neurological Effects:**

Not applicable for normal use.

**Teratogenicity:**

Not applicable

**Reproductive Toxicity:**

Not applicable

**Mutagenicity (Genetic Effects):**

Not applicable

**Toxicologically Synergistic Materials:**

Not applicable



## MATERIAL SAFETY DATA SHEET

### Section 12: Ecological Information

<u>Ecotoxicity:</u>	Not available
<u>Mobility:</u>	Not available
<u>Persistence and degradability:</u>	Not available
<u>Bioaccumulative potential:</u>	Not available
<u>Other adverse effects:</u>	Not available

### Section 13: Disposal Considerations

<u>Waste Disposal Method:</u>	Do NOT dump into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage.
<u>USA:</u>	Dispose of in accordance with local, state and federal laws and regulations.
<u>Canada:</u>	Dispose of in accordance with local, provincial and federal laws and regulations.
<u>EC:</u>	Waste must be disposed of in accordance with relevant EC Directives and national, regional and local environmental control regulations. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

### Section 14: Transport Information:

<u>U.S. Hazardous Materials Regulation (DOT 49CFR)</u>	Not regulated
<u>Canadian Transportation of Dangerous Goods (TDG)</u>	Not regulated
<u>ADR/RID:</u>	Not regulated
<u>IMDG:</u>	Not regulated
<u>Marine Pollutants:</u>	Not applicable
<u>ICAO/IATA :</u>	Not regulated



## MATERIAL SAFETY DATA SHEET

### Section 15: Regulatory Information

#### NFPA Hazard Rating

Category	NFPA
Acute Health	0
Flammability	0
Instability	0

#### USA

**TSCA Status:** All ingredients in the product are listed on the TSCA inventory.

**SARA Title III:**

Sec. 302/304: None

Sec. 311/312: None

Sec. 313: None

CERCLA RQ Hydrochloric acid 5 000 lbs (2 270 kg); Ammonium Chloride 5 000 lbs (2 270 kg)

**California Prop 65 :** This product does not contain chemicals known to the State of California to cause cancer or reproductive toxicity.

**State Right-to-Know Lists :** Hydrochloric acid, 2-aminoethanol and Ammonium chloride can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

#### Canada

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

**WHMIS Classification:** Not Controlled

**NSNR Status (New Substance Notification Regulations):** All ingredients in the product are listed, as required, on Canada's Domestic Substances List (DSL).

**NPRI Substances (National Pollutant Release Inventory):** Hydrochloric acid is an NPRI reportable substance.

#### **EC Classification for the Substance/Preparation:**

**Symbol:** Not Dangerous

**Risk Phrases:** None

**Safety Phrases:** S1/2: Keep locked up and out of the reach of children.

**MATERIAL SAFETY DATA SHEET****Section 16: Other Information****Full Text of R-phrases  
appearing in Section 2:**

R20/21/22: Harmful by inhalation, in contact with skin, and if swallowed  
R22: Harmful if swallowed  
R34: Causes burns  
R36: Irritating to eyes  
R37: Irritating to respiratory system

**Preparation Information:****Preparation Date:** August 11, 2005**Revision Date:** March 4, 2008**Revision Summary:** August 11, 2005: Preparation Date  
March 4, 2008: Updated Exposure Limits (Section 8) and Toxicological Information (Section 11).**Prepared by:** LEHDER Environmental Services Limited  
704 Mara Street, Suite 210, Pt. Edward, ON  
N7V 1X4  
[www.lehder.com](http://www.lehder.com)**Phone:** (519) 336-4101**Disclaimer:** While LEHDER Environmental Services Limited believes that the data set forth herein is accurate, as of the date hereof, LEHDER makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data is offered solely for your consideration, investigation and verification.**Manufacturer Disclaimer:** The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.





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1301 E. 9th Street, #700  
Cleveland OH 44114  
(800) 726-9626



Material Safety Data Sheet

MSDS Form No. : 19135

Item No. :

\*\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*\*

VALVE ACTION PAINT MARKER-YELLOW

Part # 19135

\*\*\*\* SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION \*\*\*\*

MSDS Name: VALVE ACTION PAINT MARKER-YELLOW  
Product CAS: (none)  
Product Code:  
Synonyms: 19135; VALVE ACTION PAINT MARKER-YELLOW  
Company Identification:  
Name: LA-CO INDUSTRIES, INC. / MARKAL COMPANY  
Address: 1201 PRATT BLVD.  
Address:  
City: ELK GROVE VILLAGE State: IL Zip: 60007-5746  
For information, call: 847-956-7600  
Emergency Number: 800-424-9300  
Emergency Agency:  
Number:  
MSDS Creation Date: 3/1/2005  
Supersedes Date:

\*\*\*\* SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS \*\*\*\*

Chemical Name	CAS	MIN	MAX
MINERAL SPIRITS	64742-88-7	30	50
VM&P NAPHTHA	8032-32-4	10	30
XYLENE	1330-20-7	5	10

Miscellaneous:

CHEMICAL	ACGIH TWA
VM&P	TWA 300 PPM (1370 MG/M3)
XYLENE	TWA 100 PPM STEL = 150 PPM

Lbs of VOC per Gallon Coating (minus water): 0  
Coating Density (lbs/gal): 0  
Solvent Density (lbs/gal): 0  
Percent Solvent (volume): 0  
Percent Solids (volume): 0  
Percent Water (volume): 0

\*\*\*\* SECTION 3 - HAZARDS IDENTIFICATION \*\*\*\*

NFPA: Health: 3 Fire: 2 Reactivity: 1 Other:  
HMIS: Health: 3 Fire: 1 Reactivity: 1 Special Protection:

POTENTIAL HEALTH EFFECTS

Target Organs:  
EYES, SKIN, INGESTION, INHALATION.

Eye:  
LIQUID AND VAPORS CAN IRRITATE EYES.

Skin:  
MAY PROEUCE SKIN IRRITATION. PROLONGED OR REPEATED CONTACT MAY RESULT IN DEFATTING AND DRYING OF SKIN, WHICH MAY RESULT IN DERMATITIS.

Ingestion:  
PRODUCT IS RESUMED TO BE SLIGHTLY TOXIC. MAY CAUSE NERVOUS SYSTEM DEPRESSION. SMALL AMOUNTS OF LIQUID ASPIRATED IN TO THE LUNGS DURING INGESTION OR FROM VOMITING MAY RESULT IN SEVERE LUNG DA  
AGE.

Inhalation:  
MAT PRODUCE IRRITATION OF THE NOSE, THROAT, RESPIRATORY TRACT, AND MUCOUS MEMBRANCES. HIGH CONCENTRATIONS OF VAPOR MAY PRODUCE CENTRAL NERVOUS SYSTEM DEPRESSION. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Miscellaneous:

\*\*\*\* SECTION 4 - FIRST AID MEASURES \*\*\*\*

Eye:  
IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN. REMOVE CONTACT LENSES. GET MEDICAL ATTENTION.

Skin:  
REMOVE CONTAMINATED CLOTHING. WIPE EXCESS FROM SKIN. FLUSK SKIN WITH WATER OR WASH WITH SOAP

AND WATER. CONSULT PHYSICIAN IF IRRITATION DEVELOPS.

**Ingestion:**

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. DO NOT INDUCE VOMITING. IF VOMITING IS SPONTANEOUSLY OCCURS, KEEP THE VICTIM'S HEAD BELOW THE HIPS TO PREVENT ASPIRATION INTO THE LUNGS.

**Inhalation:**

REMOVE VICTIM TO FRESH AIR. GIVE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED. GET MEDICAL ATTENTION.

**Notes to Physician:**

\*\*\*\* SECTION 5 - FIRE FIGHTING MEASURES \*\*\*\*

**Unusual Fire and Explosion Hazards:**

NONE KNOWN.

**Special Fire Fighting Procedures:**

KEEP PERSONNEL REMOVED AND UPWIND OF ANY FIRE. WEAR FULL FIRE FIGHTING TURN-OUT GEAR (FULL BUNKER GEAR), AND RESPIRATORY PROTECTION (SCBA). CONTAINERS EXPOSED TO INTENSE HEAT SHOULD BE COOLED WITH WATER TO PREVENT PRESSURE BUILDUP, WHICH COULD RESULT ON CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

**Extinguishing Media:**

WATER FOG, FOAM, DRY CHEMICAL, CARBON DIOXIDE.

**Flash Point:**

73 DEG F/23 DEG C (SETFLASH)

**Flammable Limits:**

Lower Limit:

N.D.

Upper Limit:

N.D.

**AutoIgnition Temperature:**

N/A

**General Information:**

\*\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*\*

**Disposal:**

DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

**Spills/Leaks:**

TAKE UP SPILL WITH ABSORBENT MATERIAL AND PLACE IN AN NON-LEAKING CONTAINER. SEAL CONTAINER FOR PROPER DISPOSAL.

\*\*\*\* SECTION 7 - HANDLING and STORAGE \*\*\*\*

**Handling:**

HANDLE AS A FLAMMABLE LIQUID. DO NOT DROP CONTAINER. READ ALL LABEL CAUTIONS. DO NOT CUT, WELD, GRIND OR DRILL NEAR CONTAINERS.

**Storage:**

STORE AWAY FROM IGNITION SOURCES, IN A COOL, WELL VENTILATED AREA. STORE AWAY FROM INCOMPATIBLE CHEMICALS.

\*\*\*\* SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION \*\*\*\*

**Engineering Controls:**

LOCAL EXHAUST.

**Eyes:**

SAFETY GLASSES.

**Skin:**

USE IMPERVIOUS GLOVES.

**Clothing:**

EYEWASH OR AND SAFETY SHOWER.

**Respirators:**

USE A NIOSH/MSHA APPROVED BODY COVERING CLOTHING AS NEEDED.

\*\*\*\* SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*

**Appearance/Odor:**

PAINT/LIQUID  
ORGANIC SOLVENT

pH: N.A.

Vapor Pressure: 9.5 FOR XYLENE

Vapor Density: N.D.

Evaporation Rate: 0.75 FOR XYLENE

Viscosity: N.A

Boiling Point: 244 DEG F/118 DEG C FOR VM&P NAPHTHA

Freezing/Melting Point: N.A.

Decomposition Temperature: N.A.  
Solubility: IN WATER: INSOLUBLE  
Specific Gravity: 1.1  
Molecular Formula: N.A.  
Molecular Weight: N.A.  
Miscellaneous:  
VOC 45-60% W/W 65%-70% V/V

\*\*\*\* SECTION 10 - STABILITY AND REACTIVITY \*\*\*\*

Chemical Stability:  
STABLE

Conditions to Avoid:  
OXIDIZERS

Incompatibilities with Other Materials:  
OXIDIZERS

Hazardous Decomposition Products:  
N.D.

Hazardous Polymerization:  
WILL NOT OCCUR.

\*\*\*\* SECTION 11 - TOXICOLOGICAL INFORMATION \*\*\*\*

Toxicological Information:  
NO DATA

\*\*\*\* SECTION 12 - ECOLOGICAL INFORMATION \*\*\*\*

Ecological Information:  
NO DATA

\*\*\*\* SECTION 13 - OTHER PRECAUTIONS \*\*\*\*

Other Precautions:  
NO DATA

Work/Hygienic Practices:  
WASH HANDS AFTER USE.

\*\*\*\* SECTION 14 - TRANSPORT INFORMATION \*\*\*\*

Transportation Information:

D.O.T. US CONSUMER COMMODITY ORM-D (LESS THAN 30 KG ROSS PACKAGE WEIGHT)  
COMBUSTIBLE LIQUID,  
N.O.S. HAZARD CLASS 3, UN NO 1993, PACKING GROUP III (GREATER THAN 30 KG GROSS  
PACKAGE WEIGHT).  
TDG (CANADA) CONSUMER COMMODITY ORM-D (LESS THAN 30 KG GROSS PACKAGE WEIGHT)  
COMBUSTIBLE  
LIQUID, N.O.S. HAZARD CLASS 3, UN NO 1993, PACKAGING GROUP III (GREATER THAN 30 KG  
GROSS  
PACKAGE WEIGHT).

INTERNATIONAL MARITIME ORGANIZATION (IMO) EXEMPT (<.51/MARKER)  
INTERNATIONAL AIR TRANSPORT FLAMMABLE LIQUIDS N.O.S. UN NO 1993 ADR: UN 1263;  
CLASS 3; ITEM 31  
DEG C; HAAZRD IDENTIFICATION NO 30; CEFIC TREMCARD IS NOT APPLICABLE  
ICAO: NOT DETERMINED

AUSTRALIAN CODE FOR THE TRANSPORT OR DANGEROUS GOODS  
DANGEROUS GOOD CLASS AND SUBSIDIARY RISK: NOT DETERMINED.

Label Information:

NO DATA

\*\*\*\* SECTION 15 - REGULATORY INFORMATION \*\*\*\*

Regulatory Information:

APPEARS ON THE CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROP 65)  
SUBSTANCES LIST  
T.  
APPEARS ON THE MASSACHUSETTS SUBSTANCES LIST.  
APPEARS ON THE NEW JERSEY RIGHT-TO-KNOW HAZARDOUS SUBSTANCES LIST.  
APPEARS ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST.  
APPEARS ON THE CANADIAN WHMIS INGREDIENTS DISCLOSURE LIST.

U.S.A.

OSHA HAZARD STATUS: THIS PRODUCT IS CONSIDERED TO BE HAZARDOUS AS DEFINED BY THE  
U.S. OSHA HCS  
(29 CFR 1910.1200).

EPA SARA SEC 311/312 HAZARD CATEGORIES: IMMEDIATE (ACUTE) HEALTH HAZARD, FIRE  
HAZARD  
TOXIC SUBSTANCES CONTROL ACT (TSCA) ALL INGREDIENTS CONTAINED IN THIS PRODUCT ARE  
LISTED ON THE  
U.S. EPA TSCA CHEMICAL SUBSTANCE INVENTORY.

CANADA

WHMIS STATUS: THIS PRODUCT IS CONSIDERED TO BE HAZARDOUS AS DEFINED BY CANADIAN  
WHMIS  
CONTROLLED PRODUCTS REGULATIONS  
WHMIS RATING: D-1B, B-2  
WHMIS PRECAUTIONARY STATEMENT: NONE REQUIRED.

E.U.

EUROPEAN INVENTORY OF EXISTING CHEMICAL SUBSTANCES: ALL INGREDIENTS CONTAINED IN THIS PRODUCT

ARE LISTED ON THE EUROPEAN INVENTORY OF EXISTING CHEMICALS SUBSTANCES( EINECS).  
CATEGORIES OF DANGER LABELING INFORMATION; FLAMMABLE (F) HARMFUL (XN) RISK (R).

AUSTRALIA

WORKSAFE AUSTRALLIA STATUS: THIS PRODUCT IS CLASSIFIED AS HAZARDOUS ACCORDING TO  
CRITERIA OF  
WORKSAFE AUSTRALIA.

\*\*\*\* SECTION 16 - ADDITIONAL INFORMATION \*\*\*\*

Additional Information:

NO DATA







UTILITY MANUFACTURING CO., INC.  
700 MAIN STREET, WESTBURY, NY 11590  
(516) 997-6300 - FAX # (516) 997-6345

## MATERIAL SAFETY DATA SHEET

### NO-FREEZ INHIBITOR

**FOR CHEMICAL EMERGENCY:** Spill, Leak, Fire, Exposure, or Accident - Call **INFOTRAC** - Day or Night: **1-800-535-5053**  
**THIS MSDS COMPLIES WITH 29 CFR 1910.1200** (HAZARD COMMUNICATION STANDARD) **IMPORTANT:** Read this MSDS before handling & disposing of this product. Pass this information on to employees, customers and users of this product.

#### PRODUCT IDENTIFICATION

**DOT Shipping name:** DIPOTASSIUM PHOSPHATE      **CAS NO.:** 7758-11-4  
**Chemical Family:** PHOSPHATE      **UN/NA #:** N/A  
**DOT Hazard Class:** NONE      **DATE OF ISSUE:** 4/08

#### SECTION I - HAZARDOUS INGREDIENTS/EXPOSURE LIMITS

Hazardous Ingredients:	CAS #	TLV/PEL	AGENCY	TYPE	SARA-313(% Range)
DIPOTASSIUM PHOSPHATE	7758-11-4	N/A			

NOT HAZARDOUS BY OSHA REGULATIONS

#### SECTION II - EMERGENCY AND FIRST AID PROCEDURES

**EYE CONTACT:** Flush eyes with plenty of water.

**SKIN CONTACT:** Wash off in flowing water or shower.

**INHALATION: (breathing)** Remove to fresh air if effects occur. Consult a physician.

**INGESTION: (swallowing)** No adverse effects anticipated by this route of exposure incidental to proper industrial handling. Large doses may cause nausea, vomiting and diarrhea.

#### SECTION III - HEALTH HAZARDS / ROUTES OF ENTRY

**EYE CONTACT:** May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Mists may cause eye irritation.

**SKIN CONTACT:** Prolonged contact is essentially non-irritating to skin.

**INHALATION: (breathing)** At room temperature, vapors are minimal due to physical properties. Mists may cause irritation of upper respiratory tract.

**INGESTION: (swallowing)** Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.

#### SECTION IV - SPECIAL PROTECTION INFORMATION

**VENTILATION:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

**RESPIRATORY PROTECTION:** In misty atmospheres, use an approved mist respirator.

**SKIN PROTECTION:** No special requirements.

**EYE PROTECTION:** Safety glasses should be sufficient for most operations; however, for misty operations wear chemical goggles.

#### SECTION V - REACTIVITY DATA

**STABILITY:** Stable

**INCOMPATIBILITY:** (materials to avoid) None

**HAZARDOUS DECOMPOSITION PRODUCTS:** None

**HAZARDOUS POLYMERIZATION:** Will not occur

#### SECTION VI - SPILL OR LEAK PROCEDURES

**PRECAUTIONS IN CASE OF LEAK OR SPILL** Collect material in suitable and properly labeled containers for disposal.

**WASTE DISPOSAL METHOD:** All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

#### SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

**HANDLING AND STORAGE PRECAUTIONS:** Keep containers tightly closed when not in use. Material is very hygroscopic.

#### SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

**EXTINGUISHING MEDIA:** Material is nonflammable and noncombustible

**FIRE AND EXPLOSION HAZARD:** None.

**FIRE FIGHTING PROCEDURES:** N/A



**UTILITY MANUFACTURING CO., INC.**  
 700 MAIN STREET, WESTBURY, NY 11590  
 (516) 997-6300 - FAX # (516) 997-6345

**MATERIAL SAFETY DATA SHEET**

**NO-FREEZ INHIBITOR**

**SECTION IX - PHYSICAL DATA**

<b>APPROXIMATE BOILING POINT (DEG C):</b>	>1500	<b>PER CENT VOLATILE:</b>	0
<b>SPECIFIC GRAVITY (68 F):</b>	123	<b>FLASH POINT (TCC, DEG F):</b>	Nonflammable
<b>RELATIVE EVAPORATION RATE (ESTIMATED):</b>	NONVOLATILE	<b>PER CENT SOLUBILITY IN WATER:</b>	100
<b>VAPOR PRESSURE @20C mmHg (CALCULATED):</b>	NONVOLATILE		

**SECTION X - OTHER REGULATORY DATA**

**SARA**

*SECTION* 302: NOT LISTED  
*SECTION* 311 & 312: NOT LISTED  
*SECTION* 313: See Section I.I

**HMIS**

Health: 0  
 Flammability: 0  
 Reactivity: 0

**TSCA**

All components are in full compliance with the TSCA inventory.

**CALIFORNIA PROPOSITION 65**

NOT LISTED

**RCRA**

Waste material would be a D001

**CERCLA**

NOT LISTED

**CARCINOGENICITY:**

NOT LISTED with NTP or IARC.

**NOTICE**

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufactures and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Chevron Hydraulic Oil AW

**Product Use:** Hydraulic Oil

**Product Number(s):** CPS255673, CPS255674, CPS255675

**Synonyms:** Chevron Hydraulic Oil AW ISO 32, Chevron Hydraulic Oil AW ISO 46, Chevron Hydraulic Oil AW ISO 68

#### Company Identification

Chevron Products Company  
a division of Chevron U.S.A. Inc.  
6001 Bollinger Canyon Road  
San Ramon, CA 94583  
United States of America  
www.chevronlubricants.com

#### Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

#### Health Emergency

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

#### Product Information

email : lubemsds@Chevron.com

Product Information: (800) LUBE TEK

MSDS Requests: (800) 414-6737

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	90 - 100 %weight

## SECTION 3 HAZARDS IDENTIFICATION

### IMMEDIATE HEALTH EFFECTS

**Eye:** Not expected to cause prolonged or significant eye irritation.

**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

**Ingestion:** Not expected to be harmful if swallowed.

**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

## SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

**Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

**Note to Physicians:** In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

## SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

### FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

### FLAMMABLE PROPERTIES:

**Flashpoint:** (Cleveland Open Cup) 170 °C (338 °F) (Min)

**Autoignition:** No Data Available

**Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

### PROTECTION OF FIRE FIGHTERS:

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling,

gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

### ENGINEERING CONTROLS:

Use in a well-ventilated area.

### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

**Respiratory Protection:** No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Yellow

**Physical State:** Liquid

**Odor:** Petroleum odor

**pH:** Not Applicable

**Vapor Pressure:** <0.01 mmHg @ 37.8 °C (100 °F)

**Vapor Density (Air = 1):** >1

**Boiling Point:** >315°C (599°F)

**Solubility:** Soluble in hydrocarbon solvents; insoluble in water.

**Freezing Point:** Not Applicable

**Specific Gravity:** 0.86 - 0.9 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)

**Density:** 0.86 kg/l - 0.9 kg/l @ 15°C (59°F)

**Volatile Organic**

**Compounds (VOC) :** <2.1 %weight

**Viscosity:** 28.8 cSt @ 40°C (104°F) (Min)

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Hazardous Decomposition Products:** None known (None expected)

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Sensitization:** No product toxicology data available.

**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

### ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

## SECTION 12 ECOLOGICAL INFORMATION

### ECOTOXICITY

48 hour(s) EC50: >1000 mg/l (Daphnia magna)

96 hour(s) LC50: >1000 mg/l (Oncorhynchus mykiss)

This material is not expected to be harmful to aquatic organisms.

### ENVIRONMENTAL FATE

This material is not expected to be readily biodegradable.

## SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

## SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT Shipping Description:** PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

**Additional Information:** NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

**IMO/IMDG Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS

## GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

<b>SECTION 15 REGULATORY INFORMATION</b>
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**EPCRA 311/312 CATEGORIES:** 1. Immediate (Acute) Health Effects: NO  
 2. Delayed (Chronic) Health Effects: NO  
 3. Fire Hazard: NO  
 4. Sudden Release of Pressure Hazard: NO  
 5. Reactivity Hazard: NO

## REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

**CHEMICAL INVENTORIES:**

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

One or more components is listed on ELINCS (European Union). Secondary notification by the importer may be required. All other components are listed or exempted from listing on EINECS.

**NEW JERSEY RTK CLASSIFICATION:**

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

**WHMIS CLASSIFICATION:**

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

<b>SECTION 16 OTHER INFORMATION</b>
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**NFPA RATINGS:** Health: 0 Flammability: 1 Reactivity: 0

**HMIS RATINGS:** Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, \*- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**LABEL RECOMMENDATION:**

Label Category : INDUSTRIAL OIL 1 - IND1

**REVISION STATEMENT:** This revision updates the following sections of this Material Safety Data Sheet: 2,15.

**Revision Date:** January 11, 2007

**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit

	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**



# MATERIAL SAFETY DATA SHEET

## **CHEM-FROST**

### SECTION 1 IDENTIFICATION

COMPANY NAME: CHEMICAL SPECIALTIES, INC.  
EMERGENCY PHONE NUMBER: 303-675-0944  
TRADE NAME: INHIBITED PROPYLENE GLYCOL

### SECTION 2 HAZARDOUS INGREDIENTS

<u>Chemical Name/ Common Name</u>	<u>Cas#</u>	<u>Percentage</u>	<u>TLV Source</u>
Propylene glycol	000057-55-6	90%	N/A
Dipotassium Phosphate	007758-11-4	<3%	N/A
Deionized Water	007732-18-5	<7%	N/A

This document is prepared pursuant to the OSHA Hazard Communication Standard (29CFR 19101200). In addition, other substances not "Hazardous" per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

NFPA RATINGS (Scale 0-4)	<u>Health</u>	<u>Fire</u>	<u>Reactivity</u>	<u>Other</u>
	0	1	0	N/A

### SECTION 3 PHYSICAL DATA

BOILING POINT: 370F, 188C	SPECIFIC GRAVITY:(H2O=1) N/C
VAPOR PRESSURE (mm Hg):.22 mmHg@20C	ph: 9.5-10
VAPOR DENSITY (Air=1): 2.62	EVAPORATION RATE: unknown
SOLUBILITY IN WATER: COMPLETE	APPEARANCE/ODOR: clear

### SECTION 4 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 215F, 102C  
EXTINGUISH MEDIA: NONE NEEDED  
SPECIAL FIRE FIGHTING PROCEDURES: NONE  
UNUSUAL FIRE AND EXPLOSION HAZARDS: N/A

### SECTION 5 REACTIVITY DATA

CHEMICAL STABILITY: Stable in normal temp range (-30F-250F)  
INCOMPATIBLE MATERIALS: Unknown  
DECOMPOSITION PRODUCTS: N/A  
CONDITIONS TO AVOID: NONE  
HAZARDOUS POLYMERIZATION: Will not occur.

# **MATERIAL SAFETY DATA SHEET**

## **CHEM-FROST**

### **SECTION 6 EMERGENCY AND FIRST AID PROCEDURES**

- Eyes: Flush with water for at least 5 minutes
- Skin: Wash with flowing water or shower
- Ingestion: (swallowing) Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.
- Inhalation: Remove to fresh air

### **SECTION 7 SPECIAL PROTECTION INFORMATION**

- Respiratory Protection: None      Ventilation Requirements: Local exhaust adequate
- Protective Gloves: None      Eye Protection: None Required
- Other Protective Clothing: None      Work Hygenic Practices: Keep out of eyes

### **SECTION 8 SPILL OR LEAK PROCEDURES**

- Steps to be taken if Released or Spilled: Contain spill, remove with inert absorbent material. Wash spill area with water.
- Waste Disposal Methods: In accordance with federal, state and local regulations

### **SECTION 9 STORAGE AND HANDLING INFORMATION**

- Precautions to be taken in handling and storage: keep from freezing, keep out of reach of children.

THE INFORMATION HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE

# Material Safety Data Sheet

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### Diesel Fuel No.2/GTL/Diesel

**Product Use:** Fuel

**Company Identification**

Chevron Products Company  
Marketing, MSDS Coordinator  
6001 Bollinger Canyon Road  
San Ramon, CA 94583  
United States of America

**Transportation Emergency Response**

CHEMTREC: (800) 424-9300 or (703) 527-3887

**Health Emergency**

Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

**Product Information**

MSDS Requests: (800) 689-3998  
Technical Information: (510) 242-5357

## SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Diesel Fuel No. 2	68476-34-6	70 - 100 %weight
Distillates (Fischer-Tropsch), C8-26	Pending	< 25 %weight
Naphthalene	91-20-3	0.02 - 0.2 %weight

This product is being sent to you as a Research and Development product as defined by the Toxic Substances Control Act (TSCA) of 1976. Due to TSCA's R&D exemption, this product is not listed on the U.S. EPA's Toxic Substances Control Act (TSCA's) inventory. As a TSCA-exempt R&D substance, this product must be used by, or directly under the supervision of a technically qualified individual(s) as defined by TSCA. This product may not be used for commercial purposes or in formulations used for commercial purposes.

## SECTION 3 HAZARDS IDENTIFICATION

\*\*\*\*\*

### EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
- HARMFUL OR FATAL IF SWALLOWED - MAY CAUSE LUNG DAMAGE IF SWALLOWED
- MAY BE FATAL IF INHALED
- MAY CAUSE DIZZINESS, DROWSINESS AND REDUCED ALERTNESS
- CAUSES SKIN IRRITATION
- MAY CAUSE CANCER BASED ON ANIMAL DATA
- TOXIC TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT
- FOR RESEARCH AND DEVELOPMENT PURPOSES ONLY - MAY CONTAIN SUBSTANCES NOT ON THE TSCA INVENTORY

- TO BE USED ONLY UNDER THE DIRECT SUPERVISION OF A TECHNICALLY QUALIFIED INDIVIDUAL

\*\*\*\*\*

### IMMEDIATE HEALTH EFFECTS

**Eye:** Not expected to cause prolonged or significant eye irritation.

**Skin:** Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering. Not expected to be harmful to internal organs if absorbed through the skin.

**Ingestion:** Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.

**Inhalation:** Highly toxic; may be fatal if inhaled. Symptoms of respiratory irritation may include coughing and difficulty breathing. Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

### DELAYED OR OTHER HEALTH EFFECTS:

**Cancer:** Prolonged or repeated exposure to this material may cause cancer. Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Whole diesel engine exhaust has been classified as a Group 2A carcinogen (probably carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

See Section 11 for additional information. Risk depends on duration and level of exposure.

### SECTION 4 FIRST AID MEASURES

**Eye:** No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

**Skin:** Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**Ingestion:** If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

**Inhalation:** During an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

**Note to Physicians:** Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

### SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

#### FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Combustible liquid.

**NFPA RATINGS:** Health: 2 Flammability: 2 Reactivity: 0

#### FLAMMABLE PROPERTIES:

**Flashpoint:** (Pensky-Martens Closed Cup) 52 °C (125 °F) (Min)

**Autoignition:** 208 °C (406 °F) Minimum

**Flammability (Explosive) Limits (% by volume in air):** Lower: 0.6 Upper: 4.7

**EXTINGUISHING MEDIA:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

#### PROTECTION OF FIRE FIGHTERS:

**Fire Fighting Instructions:** For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

**Protective Measures:** Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

## SECTION 7 HANDLING AND STORAGE

**Precautionary Measures:** Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 29C (85F).

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.

**Unusual Handling Hazards:** WARNING! Do not use as portable heater or appliance fuel. Toxic fumes may accumulate and cause death.

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

**General Storage Information:** DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

### ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

**Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

**Skin Protection:** Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.

**Respiratory Protection:** Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.

When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations

are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

#### Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Diesel Fuel No. 2	ACGIH	100 mg/m3	--	--	Skin A3 total hydrocarbon
Diesel Fuel No. 2	CVX	--	1000 mg/m3	--	--
Naphthalene	ACGIH	10 ppm (weight)	15 ppm (weight)	--	Skin
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Varies depending on specification

**Physical State:** Liquid

**Odor:** Petroleum odor

**pH:** Not Applicable

**Vapor Pressure:** 0.54 kPa (Approximate) @ 25 °C (77 °F)

**Vapor Density (Air = 1):** >1

**Boiling Point:** 175.6°C (348°F) - 370°C (698°F)

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Freezing Point:** Not Applicable

**Melting Point:** Not Applicable

**Viscosity:** 1.3 cSt - 4.5 cSt @ 40°C (104°F)

## SECTION 10 STABILITY AND REACTIVITY

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Hazardous Decomposition Products:** None known (None expected)

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

### IMMEDIATE HEALTH EFFECTS

**Eye Irritation:** The eye irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for similar materials or product components.

**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for similar materials or product components.

**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

### ADDITIONAL TOXICOLOGY INFORMATION:

This product contains naphthalene. **GENERAL TOXICITY:** Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts.

**REPRODUCTIVE TOXICITY AND BIRTH DEFECTS:** Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta. **GENETIC TOXICITY:** Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a

mutagen in several other in-vitro tests. **CARCINOGENICITY:** In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in the high-dose female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose. Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day. This product contains gas oils.

CONCAWE (product dossier 95/107) has summarized current health, safety and environmental data available for a number of gas oils, typically hydrodesulfurized middle distillates, CAS 64742-80-9, straight-run middle distillates, CAS 64741-44-2, and/or light cat-cracked distillate CAS 64741-59-9. **CARCINOGENICITY:** All materials tested have caused the development of skin tumors in mice, but all featured severe skin irritation and sometimes a long latency period before tumors developed. Straight-run and cracked gas oil samples were studied to determine the influence of dermal irritation on the carcinogenic activity of middle distillates. At non-irritant doses the straight-run gas oil was not carcinogenic, but at irritant doses, weak activity was demonstrated. Cracked gas oils, when diluted with mineral oil, demonstrated carcinogenic activity irrespective of the occurrence of skin irritation. Gas oils were tested on male mice to study tumor initiating/promoting activity. The results demonstrated that while a straight-run gas oil sample was neither an initiator or promotor, a blend of straight-run and FCC stock was both a tumor initiator and a promotor.

**GENOTOXICITY:** Hydrotreated & hydrodesulfurized gas oils range in activity from inactive to weakly positive in in-vitro bacterial mutagenicity assays. Mouse lymphoma assays on straight-run gas oils without subsequent hydrodesulphurization gave positive results in the presence of S9 metabolic activation. In-vivo bone marrow cytogenetics and sister chromatic exchange assay exhibited no activity for straight-run components with or without hydrodesulphurization. Thermally or catalytically cracked gas oils tested with in-vitro bacterial mutagenicity assays in the presence of S9 metabolic activation were shown to be mutagenic. In-vitro sister chromatic exchange assays on cracked gas oil gave equivocal results both with and without S9 metabolic activation. In-vivo bone marrow cytogenetics assay was inactive for two cracked gas oil samples. Three hydrocracked gas oils were tested with in-vitro bacterial mutagenicity assays with S9, and one of the three gave positive results. Twelve distillate fuel samples were tested with in-vitro bacterial mutagenicity assays & with S9 metabolic activation and showed negative to weakly positive results. In one series, activity was shown to be related to the PCA content of samples tested. Two in-vivo studies were also conducted. A mouse dominant lethal assay was negative for a sample of diesel fuel. In the other study, 9 samples of No 2 heating oil containing 50% cracked stocks caused a slight increase in the number of chromosomal aberrations in bone marrow cytogenetics assays. **DEVELOPMENTAL TOXICITY:** Diesel fuel vapor did not cause fetotoxic or teratogenic effects when pregnant rats were exposed on days 6-15 of pregnancy. Gas oils were applied to the skin of pregnant rats daily on days 0-19 of gestation. All but one (coker light gas oil) caused fetotoxicity (increased resorptions, reduced litter weight, reduced litter size) at dose levels that were also maternally toxic.

This product may contain significant amounts of Polynuclear Aromatic Hydrocarbons (PAH's) which have been shown to cause skin cancer after prolonged and frequent contact with the skin of test animals. Brief or intermittent skin contact with this product is not expected to have serious effects if it is washed from the skin. While skin cancer is unlikely to occur in human beings following use of this product, skin contact and breathing, of mists, vapors or dusts should be reduced to a minimum.

## SECTION 12 ECOLOGICAL INFORMATION

### ECOTOXICITY

This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

### ENVIRONMENTAL FATE

On release to the environment the lighter components of diesel fuel will generally evaporate but depending on local environmental conditions (temperature, wind, mixing or wave action, soil type, etc.) the remainder may become dispersed in the water column or absorbed to soil or sediment. Diesel fuel would not be expected to be readily biodegradable. In a modified Strum test (OECD method 301B) approximately 40% biodegradation was recorded over 28 days. However, it has been shown that most hydrocarbon components of diesel fuel are degraded in soil in the presence of oxygen. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.

## SECTION 13 DISPOSAL CONSIDERATIONS



Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

## SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT Shipping Description:** GAS OIL, COMBUSTIBLE LIQUID, UN1202,III

**IMO/IMDG Shipping Description:** UN1202, GAS OIL, 3, III, FLASH POINT SEE SECTION 5

**ICAO/IATA Shipping Description:** UN1202, GAS OIL, 3, III

## SECTION 15 REGULATORY INFORMATION

**EPCRA 311/312 CATEGORIES:** 1. Immediate (Acute) Health Effects: YES  
2. Delayed (Chronic) Health Effects: YES  
3. Fire Hazard: YES  
4. Sudden Release of Pressure Hazard: NO  
5. Reactivity Hazard: NO

### REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Diesel Fuel No. 2	07
Naphthalene	01-2B, 02, 03, 04, 05, 06, 07

### CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Naphthalene	100 lbs	None	55556 lbs

### CHEMICAL INVENTORIES:

One or more components does not comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

### NEW JERSEY RTK CLASSIFICATION:

Refer to components listed in Section 2. Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: DIESEL FUEL

### WHMIS CLASSIFICATION:

Class B, Division 3: Combustible Liquids  
Class D, Division 1, Subdivision A: Very Toxic Material - Acute Lethality  
Class D, Division 2, Subdivision A: Very Toxic Material - Carcinogenicity  
Class D, Division 2, Subdivision B: Toxic Material -

Skin or Eye Irritation

**SECTION 16 OTHER INFORMATION****NFPA RATINGS:** Health: 2 Flammability: 2 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, \*-Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

**REVISION STATEMENT:** This is a new Material Safety Data Sheet.**Revision Date:** July 25, 2007**ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:**

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**

**MATERIAL SAFETY DATA SHEET  
REVISED MAY 2008**

**JC WHITLAM MANUFACTURING**

200 West Walnut Street  
Wadsworth, OH 44281  
330-334-2524 ph  
330-334-3005 fx  
[www.jcwhitlam.com](http://www.jcwhitlam.com)

For Chemical Emergency, Spill, Leak, Fire Exposure or Accident  
Call CHEMTREC Day or Night  
DOMESTIC NORTH AMERICA 800-424-9300  
INTERNATIONAL, CALL 703-527-3887 (collect calls accepted)

**PRODUCT INFORMATION**

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TRADE NAMES OR SYNONYMS:	FLOW-AIDE
FORMULA:	PROPRIETARY, CONFIDENTIALITY REQUIRED
CHEMICAL FAMILY:	WATER SCALE CLEANER

**HAZARDOUS INGREDIENTS**

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MATERIAL OR COMPONENT	TLV (p.p.m.)	PEL (p.p.m.)	APPROXIMATE %
HYDROGEN CHLORIDE, AQUEOUS	5	5	LESS THAN 10

**NOTE:** Laboratory tests indicate material to be **BIODEGRADABLE**. Certified to NSF/ANSI 60. NSF Registered for use in beverage, pharmaceutical, bottling, poultry, and other food processing plants. USFDA has no jurisdiction over the product, since it does not come in direct contact with food. Non-reportable under Sara Title 3: Section 311/312/313 Categorization. Not reportable under CERCLA.

**PHYSICAL DATA**

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BOILING POINT:	213° F / 101° C.
FREEZING POINT:	0° F / -18° C
SOLUBILITY IN WATER:	MISCIBLE
SPECIFIC GRAVITY, (WATER=1):	1.045
VAPOR PRESSURE:	30 TORR.
VAPOR DENSITY, (AIR=1):	GREATER THAN 1
PERCENT VOLATILE BY VOLUME:	99.6
APPEARANCE:	DARK LIQUID
ODOR:	ROASTED ALMONDS
pH:	UNREADABLE, GENERALLY <3
EVAPORATION RATE, (WATER=1):	SLOW
PHYSICAL STATE:	LIQUID

**FIRE AND EXPLOSION HAZARD DATA**

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FLASH POINT:	NO FLASH POINT, EXTINGUISHES FLAME
EXTINGUISHING MEDIA:	DOES NOT SUPPORT COMBUSTION
SPECIAL FIRE FIGHTING PROCEDURES:	NONE-WATER WILL CONTROL, OR CO2/DRY CHEMICALS
UNUSUAL FIRE & EXPLOSION HAZARDS:	NON-COMBUSTIBLE OR EXPLOSIVE. BREATHING APPARATUS RECOMMENDED

**HMIS**

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HEALTH:	0
FLAMMABILITY:	0
REACTIVITY:	0
PERSONAL PROTECTION:	B

## HEALTH HAZARD DATA

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**EFFECTS OF OVER EXPOSURE:  
EMERGENCY & FIRST AID:**

SHOULD NOT BE CONSIDERED HAZARDOUS WHEN USED AS DIRECTED.  
IF EYE/SKIN CONTACT, COPIOUS WATER RINSE. CONSULT PHYSICIAN.  
NOT TO BE TAKEN INTERNALLY. IF INGESTED-DO NOT INDUCE VOMITING-  
DRINK MILK, EGG WHITES, ETC. AS DIRECTED BY PHYSICIAN.

**NOTE:**

ADVERSE EFFECTS ON HUMAN HEALTH ARE NOT EXPECTED FROM THE  
FLOW-AIDE SOLUTION, BASED UPON 60+ YEARS OF USE WITHOUT  
REPORTED ADVERSE HEALTH INCIDENCE IN DIVERSE POPULATION  
GROUPS, INCLUDING EXTENSIVE USE IN THE U.S. ARMED FORCES.

## REACTIVITY DATA

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**STABILITY:  
INCOMPATIBILITIES:  
HAZARDOUS DECOMPOSITION PRODUCTS:  
HAZARDOUS POLYMERIZATION:  
CONDITIONS TO AVOID:**

STABLE  
STRONG CAUSTICS  
NONE  
WILL NOT OCCUR  
EXCESSIVE HEATING

## SPILL AND DISPOSAL PROCEDURES

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**ACTION TO TAKE FOR SPILLS:**

RINSE WITH COPIOUS AMOUNTS OF WATER TO DILUTE: SODIUM  
BICARBONATE MAY ALSO BE USED TO SOAK UP AND NEUTRALIZE LIQUID,  
IF NECESSARY.

**DISPOSAL METHOD:**

EXPENDED OR USED MATERIAL MAY BE DISPOSED OF DOWN SEWER WITH  
WATER FLUSH. MATERIAL IS **BIODEGRADABLE**-EVEN IN AS RECEIVED  
FORM.

## SPECIAL HANDLING INFORMATION

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**VENTILATION:  
RESPIRATORY:  
PROTECTIVE GLOVES:  
EYE PROTECTION:  
OTHER PROTECTIVE EQUIPMENT:**

NORMAL (MECHANICAL)  
NONE  
RECOMMENDED, SUCH AS NEOPRENE GLOVES.  
RECOMMENDED, SUCH AS CHEMICAL GOGGLES.  
AS RECOMMENDED BY PLANT SAFETY DEPARTMENT. TO PREVENT  
STAINING OF CLOTHES, WEAR AN APRON.

## SPECIAL PRECAUTIONS

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**HANDLING AND STORING:  
CAN MATERIAL BE STORED OUTSIDE?  
OTHER PRECAUTIONS:**

PRESERVE INTEGRITY OF CONTAINER.  
YES, MAINTAIN TEMPERATURE BETWEEN 10°-180° F.

Do not circulate material for more than a six hour period without consulting the manufacturer. Most **FLOW-AIDE** cleanings can be accomplished within an average of two-four hours. Please use material only as directed. If procedures are not published for your particular application, please call for assistance. Furthermore, **FLOW-AIDE** is designed to be used by itself or diluted with water and water only. Do not heat. Use **FLOW-AIDE** at an ambient temperature. Vent circulating solution to atmosphere. Some adverse reactions may occur with some alloys of aluminum, magnesium, and/or zinc. Please consult your **FLOW-AIDE** representative.

**CAUTION:** **FLOW-AIDE** is non-corrosive, but the application of **FLOW-AIDE** may expose pre-existing under deposit corrosion (pitting, holes or similar damage) that can result in leaks in pipes, equipment or systems.

**FOR ADDITIONAL INFORMATION, PLEASE REVIEW THE FLOW-AIDE SPECIFICATIONS OR CONTACT  
OUR FACILITY AT 330-334-2524.**

This data is furnished independent of any sales of the product only for your investigation and independent verification. While information is believed to be correct, J.C. Whitlam Manufacturing shall in no event be responsible for any damage whatsoever, directly or indirectly, resulting from the publication or use of or reliance upon data contained herein. No warranty, either expressed or implied, of merchantability, of fitness, or of any nature with respect to the product, or to the data, is made herein. This MSDS has been reviewed by the U.S. Department of Labors' Chicago District Office.



# MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME  <b>T.R. INDUSTRIES</b>	
STREET ADDRESS  <b>11022 VULCAN STREET</b>	
CITY, STATE AND ZIP CODE  <b>SOUTH GATE, CALIFORNIA 90280-0893</b>	
PHONE, FAX, e-MAIL	FAX 562-923-0838 562-861-3475 info@trindustries.com
EMERGENCY PHONE NUMBER (24 Hours):  <b>EMERGENCY: Transportation Call: CHEMTREC (800) 424-9300 International: 202-483-7616</b> <b>Have a physician call: LOS ANGELES POISON INFORMATION CENTER(24 Hrs.) (800) 876-4766</b>	
PRODUCT: <b>GG-1 / GG-8 / GG-64 / GG-128</b> <b>GEL GLOSS</b>	<b>CAUTION:</b> Contains Petroleum distillates and Morpholine. Harmful if swallowed. If swallowed, DO NOT induce vomiting. Call a Physician immediately. Avoid eye contact and prolonged skin contact. Use in well ventilated area.  <b>KEEP OUT OF THE REACH OF CHILDREN.</b> <b>FOR INDUSTRIAL / PROFESSIONAL USE.</b>
<i>DOT (Proper Shipping Name)</i> <b>Compound Cleaner, Non-Hazardous</b>  <u>HAZARD RATING NFPA</u> 0 - LEAST FIRE - <u>2</u> 1 - SLIGHT TOXICITY - <u>2</u> 2 - MODERATE REACTIVITY - <u>0</u> 3 - HIGH SPECIAL - _____ 4 - EXTREME	<b>IMO/IMDG (PROPER SHIPPING NAME)</b>  PETROLEUM DISTILLATE, N.O.S., COMBUSTIBLE LIQUID, UN 1268, PGII LTD QTY  <b>MARINE POLLUTANT - NO</b> <b>STOWAGE AND SEGREGATION - CATEGORY B</b> <b>EMERGENCY SCHEDULE - F-E S-E</b>

SECTION I .. INGREDIENTS			
PRODUCT	CAS NUMBER	TLV	PERCENTAGES
MINERAL SPIRITS (Stoddard Solvents)	64741-41-9	197ppm	45-50%
CRYSTALLINE SILICA	14808-60-7	0.05mg/m <sub>3</sub>	33-38%
D-LIMONENE	5989-27-5	N/E	5%
ALCOHOL	67-63-0	400ppm	5%
MORPHOLINE	1109-1-8	20ppm	.75%

threshold Limit Value

A, Osha [ ]      B, ACGII [X]      C, See Section III [ ]      D, Other [ ]      Cal Osha [ ]

## Section II .. EMERGENCY AND FIRST AID PROCEDURES

**EMERGENCY: Transportation Call: CHEMTREC (800) 424-9300 International: 202-483-7616**  
**Have a physician call: LOS ANGELES POISON INFORMATION CENTER(24 Hrs.) (800) 876-4766**

EYE CONTACT	Gently flush with large quantities of water for at least 15 minutes. Seek medical attention immediately.
SKIN CONTACT	Remove any contaminated clothing. Wash with soap and large quantities of water. Seek medical attention if irritated.
INHALATION	If breathing difficulties, dizziness, or light-headedness occur when working in areas with high vapor concentration, move to outside air immediately. If breathing stops, begin artificial respiration and seek immediate medical attention.
INGESTION	If this product is swallowed, seek medical attention immediately. <u>DO NOT</u> induce vomiting unless directed by a physician.

## Section III .. PHYSIOLOGICAL EFFECTS AND HEALTH INFORMATION

EYE EFFECTS	This product may be an eye irritant.
SKIN EFFECTS	Prolonged skin contact may result in irritation and/or Dermatitis.
SYSTEMIC EFFECTS	Various studies have shown a possible association with exposure to this product and the following:
CARCINOGEN:NTP IARC MONOGRAPHS OSHA NONE KNOWN	

## SECTION IV .. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify Type)	The use of respiratory protection depends on vapor concentration of the time-weighted TLV. Use a respirator/gas mask with appropriate cartridges and canister (NIOSH approved, if available), or supplied air equipment, depending on airborne concentration.
VENTILATION	If general mechanical ventilation proves inadequate to maintain safe vapor concentrations, supplemental local exhaust may be required. Other special precautions, such as respiratory protection, may be required if vapor concentrations cannot be reduced to below the TLV by ventilation.
EYE PROTECTION	Safety glasses and/or face shields are recommended.
PROTECTIVE GLOVES	The use of heavy rubber gloves is advised to prevent skin irritation and absorption.
OTHER PROTECTIVE EQUIPMENT	Impermeable aprons, availability of eye washes and safety are recommended.

**SECTION V .. REACTIVITY DATA**

STABILITY Conditions to avoid:	Stable NONE
INCOMPATIBILITY (Materials to avoid)	Strong oxidizing agents, strong acids or bases, and selected amines.
HAZARDOUS DECOMPOSITION PRODUCTS	Thermal decomposition in the presence of air may yield carbon monoxide and/or carbon dioxide.
HAZARDOUS POLYMERIZATION	Will Not Occur

**SECTION VI .. SPILL OR LEAK PROCEDURES*****HIGHWAY OR RAILWAY SPILLS - CALL CHEMTREC (800) 424-9300***

PRECAUTIONS IN CASE OF RELEASE OR SPILL	Stay upwind and away from spill unless wearing appropriate protective equipment. Stop and/or contain spill if it can be done safely. Keep all sources of ignition away.
WASTE DISPOSAL METHOD	Dispose of product in accordance with applicable local, county, state and Federal regulations.

**SECTION VII .. STORAGE AND SPECIAL PRECAUTIONS**

HANDLING AND STORING PRECAUTIONS	Keep product containers cool, dry and away from sources of ignition. Use and store with adequate ventilation.
OTHER PRECAUTIONS	Personnel should avoid inhalation of vapors. Should contact be made, remove saturated clothing and flush with water.

**SECTION VIII .. FIRE AND EXPLOSION HAZARD DATA**

DOT FLAMMABILITY CLASSIFICATION	Flash Point : 135° F / 57.23 ° C TCC
EXTINGUISHING MEDIA	Use Foam, CO <sub>2</sub> or dry chemical fire fighting apparatus.
UNUSUAL FIRE & EXPLOSION HAZARDS	Keep work areas free of hot metal surfaces and other sources of ignition.
HAZARDOUS POLYMERIZATION	The use of self-contained breathing apparatus is recommended for fire fighters. Avoid spreading burning liquid with water. Contact Fire Dept. immediately.

**SECTION IX .. PHYSICAL DATA**

BOILING RANGE: 315-390°F / 157.1-198.8 ° C		
Vapor Density: (AIR=1) 4.90		
EVAPORATION RATE: N-BU ACETATE=1 0.1 .1	Percent Volatile: 65%	Solubility in water: NEGLIGIBLE
SPECIFIC GRAVITY: Water=1: .78	Weight Per Gallon: 7.72 LBS	
APPEARANCE AND ODOR: THIS PRODUCT IS MILKY WHITE WITH CHARACTERISTIC ODOR.		

**SECTION X .. DOCUMENTARY INFORMATION**

Product Code: <b>GG-1 /GG-8 /GG-64/GG-128</b>	Issue date: 7/1/2009	Prepared By: M Raymondo
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*All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication of use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.*



# MATERIAL SAFETY DATA SHEET

HMIS CODES: 

H	F	R	P
3	0	2	D

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor  
Occupational Safety and Health Administrator  
(Non-Mandatory Form)  
Form Approved OMB No. 1218-0072

IDENTITY (AS USED ON LABEL AND LIST):

**GREEN-BLASTER DRAIN OPENER** **GB**

NOTE: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

## Section I

Manufacturer's Name:  
J.C. WHITLAM MANUFACTURING COMPANY

Emergency Telephone Number:  
CHEM-TEL (800) 255-3924

Address (Number, Street, City, State, and ZIP Code):  
200 WEST WALNUT STREET

Telephone Number for Information:  
(330) 334 - 2524

P.O. BOX 380

Date Prepared: January 1, 2008

WADSWORTH, OHIO 44282-0380

Signature of Preparer (optional):

## Section II - Hazardous Ingredients/Identity Information

HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY: COMMON NAME (S))	OSHA PEL	ACGIH TLV	OTHER LIMITS Recommended	% (optional)
SODIUM HYDROXIDE (CAUSTIC SODA) [CAS#1310-73-2]	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	N/A	
ALUMINUM* *ON TOXIC LIST (SECTION 313 OF SARA)	15 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>		
SHIPPING INFORMATION FOR 1 AND 2 POUND CONTAINERS: DEPARTMENT OF TRANSPORTATION (DOT): CONSUMER COMMODITY ORM-D				
SHIPPING INFORMATION FOR 6 POUND CONTAINERS AND ALL FOREIGN SHIPMENTS: SODIUM HYDROXIDE SOLID 8,UN1823,PGII CORROSIVE SOLID				

## Section III - Physical/Chemical Characteristics

Boiling Point:	2536° F (1391.11°C) @ 760 mm Hg	Specific Gravity (H2O = 1):	2.130 @ 68°F (20°C)
Vapor Pressure (mm Hg):	N/A	Melting Point:	318°C
Vapor Density (AIR = 1):	N/A	Evaporation Rate (Butyl Acetate = 1):	N/A

Solubility in Water: 100%

Appearance and Odor: ODORLESS - GRAY-GREEN BEADS

## Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): N/A	Flammable Limits:	LEL: N/A	UEL: N/A
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Extinguishing Media: THIS MATERIAL IS NOT COMBUSTIBLE. CONTACT WITH WATER MAY GENERATE ENOUGH HEAT TO IGNITE COMBUSTIBLE MATERIALS. FOAM, CARBON DIOXIDE, OR DRY CHEMICAL MAY BE USED.

Special Fire Fighting Procedures: WEAR FULL PROTECTIVE CLOTHING. AVOID DIRECT CONTACT OF THIS PRODUCT WITH WATER AS THIS CAN CAUSE VIOLENT EXOTHERMIC REACTION.

Unusual Fire and Explosion Hazards: THIS MATERIAL MELTS AT 318°C. MOLTEN MATERIAL WILL REACT VIOLENTLY WITH WATER. IT WILL REACT WITH METALS SUCH AS ALUMINUM, TIN AND ZINC TO PRODUCE FLAMMABLE HYDROGEN GAS.

<b>Section V - Reactivity Data</b>		<b>GREEN-BLASTER DRAIN OPENER</b>		<b>GB</b>
Stability:	Unstable:		Conditions to Avoid:	
	Stable:	X		
Incompatibility (Materials to Avoid): AVOID CONTACT WITH WATER. THIS WILL PRODUCE AN EXOTHERMIC REACTION. AVOID CONTACT WITH LEATHER, WOOL, ACIDS, ORGANIC HALOGEN AND ORGANIC NITRO COMPOUNDS.				
Hazardous Decomposition or Byproducts: NONE KNOWN				
Hazardous Polymerization:	May Occur:		Conditions to Avoid:	
	Will Not Occur:	X		
<b>Section VI - Health Hazard Data</b>				
Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? YES	
Health Hazards (Acute and Chronic): ACUTE: CORROSIVE TO ALL BODY TISSUES WITH WHICH IT COMES INTO CONTACT. MAY CAUSE SUPERFICIAL DISTINCTION OF SKIN. INHALATION OF DUST, SPRAY, OR MIST MAY DAMAGE RESPIRATORY TRACT TISSUES AND INCREASE SUSCEPTIBILITY TO RESPIRATORY ILLNESS. CHRONIC: NONE KNOWN.				
Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO	
Signs and Symptoms of Exposure: BURNING OF SKIN, EYES, MOUTH, ETC.				
Medical Conditions Generally Aggravated by Exposure: NONE KNOWN				
Emergency and First Aid Procedures: EYES: FLUSH WITH WATER FOR AT LEAST 15 MINUTES AND CALL PHYSICIAN. INHALED: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, HAVE TRAINED PERSON ADMINISTER OXYGEN. IF RESPIRATION STOPS, GIVE MOUTH-TO-MOUTH RESUSCITATION. SWALLOWED: DO NOT INDUCE VOMITING. DRINK LARGE QUANTITIES OF WATER FOLLOWED BY CITRUS FRUIT JUICE. SEEK MEDICAL ATTENTION IMMEDIATELY. SKIN: FLUSH WITH WATER FOR 15 MINUTES, THEN VINEGAR AND WATER SOLUTION. SEEK MEDICAL ATTENTION IMMEDIATELY.				
<b>Section VII - Precautions for Safe Handling and Use</b>				
Steps to Be Taken in Case Material is Released or Spilled: AVOID BREATHING FUMES. LEAKS SHOULD BE STOPPED. SPILLS SHOULD BE CONTAINED AND CLEANED UP IMMEDIATELY. LIQUID SPILLS SHOULD BE REMOVED WITH A VACUUM TRUCK. SOLID SPILLS SHOULD BE SCOOPED AND PLACED IN APPROVED CONTAINERS FOR DISPOSAL. THE SPILL AREA SHOULD THEN BE FLUSHED WITH LARGE AMOUNTS OF WATER.				
Waste Disposal Method: DISPOSE OF WASH WATER AND SPILL BY-PRODUCTS ACCORDING TO FEDERAL, STATE, AND LOCAL REGULATIONS.				
Precautions to Be Taken in Handling and Storing: AVOID CONTACT WITH SKIN, EYES, OR CLOTHING. STORE IN A COOL DRY PLACE. AVOID CONTACT WITH MOISTURE.				
Other Precautions: KEEP OUT OF REACH OF CHILDREN. PRODUCT IS CORROSIVE TO TIN, ALUMINUM, ZINC, AND ALLOYS CONTAINING THESE METALS AND WILL REACT VIOLENTLY WITH THESE METALS IN POWDER FORM.				
<b>Section VIII - Control Measures</b>				
Respiratory Protection (Specify Type): NIOSH/MSHA APPROVED RESPIRATOR WHERE DUST, MIST OR SPRAY MAY BE GENERATED.				
Ventilation:	Local Exhaust: PROVIDE SUFFICIENT MECHANICAL VENTILATION TO MAINTAIN LEVELS BELOW TLV(S).		Special: N/A	
	Mechanical (General): N/A		Other: N/A	
Protective Gloves: WEAR RESISTANT GLOVES SUCH AS: NEOPRENE, NITRILE RUBBER, POLYVINYL CHLORIDE, POLYETHYLENE.		Eye Protection: CHEMICAL SPLASH GOGGLES AND FACE SHIELD.		
Other Protective Clothing or Equipment: PROTECTIVE CLOTHING - RUBBER APRON WHEN HANDLING.				
Work/Hygienic Practices: WASH THOROUGHLY AFTER HANDLING OR CONTACT. EXPOSURE CAN CAUSE BURNS WHICH ARE NOT IMMEDIATELY PAINFUL OR VISIBLE. KEEP CONTAINER CLOSED.				

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REVISED 03/02/01

## ATLANTA SPECIAL PRODUCTS DIV.

## MATERIAL SAFETY DATA SHEET

For Chemical Products

Prepared to meet the requirements of OSHA Hazard Communication Standard 29 CFR 1910.1200  
and Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499.

## SECTION I - IDENTIFICATION

Atlanta Special Products Div  
P.O. Box 359  
Wasco, IL 60183  
PH: 630-377-1750 -- 800-327-3552  
FAX: 630-377-0274EMERGENCY PHONE NUMBER (24 hrs./day):  
Rocky Mountain Poison & Drug Center  
(303) 623-5716

INFORMATION PHONE NUMBER:

PRODUCT NAME: SEE TABLE BELOW

PRODUCT CLASSIFICATION: SEE TABLE BELOW

PRODUCT NAME	PART NO.	PRODUCT TYPE	DOT SHIPPING
HOT DAM	9000	HEAT SINK COMPOUND	NOT REGULATED

SECTION II - PRODUCT IDENTIFICATION AND INGREDIENTS (INCLUDING HAZARDOUS INGREDIENTS)  
IMPORTANT:

This section covers the materials from which the product is manufactured. The fumes and gases produced during normal use of this product are covered in Section V. The term "Hazardous" in "Hazardous Materials, Hazardous Ingredients and Hazardous Decomposition Products" referred to in this document, should be interpreted as a term required and defined in OSHA Hazard Communication Standard 29 CFR 1910.1200 and it does not necessarily imply the existence of any hazard.

SEE TABLE BELOW FOR COMPLETE PRODUCT INFORMATION, INCLUDING INGREDIENTS, PERCENTAGE RANGES, CAS NUMBERS, EXPOSURE LIMITS AND SECTION 313 REPORTING REQUIREMENTS. SEE SECTION IX FOR CALIFORNIA PROPOSITION 65 INFORMATION.

INGREDIENT	CAS NUMBER	EXPOSURE LIMIT (mg/M <sup>3</sup> )	SOURCE	INGREDIENT PRESENT IN PRODUCT		SECTION 313 REPORTING (NOTE 1 BELOW)	Carcinogenicity Listed
				a/k/a	DOT		
Aluminum Oxide (Note 2)	1344-28-1	10	(2)	Al <sub>2</sub> O <sub>3</sub>	HOT DAM 9000		
Aluminum Silicate	1302-76-7	5	(2)				
Bauxite	1310-16-7	5	(2)				
Phosphoric Acid	7664-38-2	1	(1)			Y	
Silica, fused (Note 3)	60676-86-0	0.1	(1)		20-30%		NTP/IARC
Sodium Silicate	6834-92-0	10	(3)		5-10%		
Water	7732-18-5	N.E.			Balance		
PROP 65 (See Note 4)					C		

Note: N/A = Not Applicable; N.E. = Not Established

- "Y" indicates chemical is reportable under SARA Title III, Section 313. (Reportable chemicals also noted by shading.)
- Exposure limit for total dust containing no asbestos and <1% crystalline silica.
- Products containing Silica (CAS 14808-60-7 or 60676-86-0) or Silicon Dioxide (CAS 7831-86-9) may contain trace amounts of free respirable silica. Free respirable silica has been listed as a suspected human carcinogen by NTP and IARC. Prolonged and repeated inhalation of free respirable silica may lead to silicosis or other serious delayed lung injury.
- "C" denotes cancer causing, "R" denotes birth defects or other reproductive harm causing, "C/R" denotes both cancer and birth defects or other reproductive harm causing.

Sources:

- Occupational Safety and Health Administration, 29 CFR 1910.1000, Permissible Exposure Limit (PEL)
- American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Value (TLV)
- Not known; nuisance particle concentration per ACGIH is 10 mg/M

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**SECTION III - PHYSICAL AND CHEMICAL DATA**

These products as shipped are non hazardous, nonflammable, non explosive and non reactive.

Rating In accordance with NFPA Code 704: Health 1; Flammability 0; Reactivity 0

<b>Boiling Point (°F):</b>	<u>HOT DAM</u>	<b>Specific Gravity (H<sub>2</sub>O=1):</b>	<u>HOT DAM</u>
<b>Vapor Pressure (mm Hg.):</b>		<b>Melting Point:</b>	
<b>Vapor Density (air=1):</b>		<b>Evaporation Rate (H<sub>2</sub>O=1):</b>	
<b>Solubility In Water:</b>		<b>pH:</b>	

**Appearance and Odor:** - Light blue or red tacky fiber paste, no odor.

**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

**NON-FLAMMABLE:** Fuel gas torches and soldering irons used for welding, brazing and soldering operations and welding arcs and sparks can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding.

**Extinguishing Media:** Products are non-flammable. Extinguishing media depends on fire type.

**Special Fire Fighting Procedures:** None

**Unusual Fire and Explosion Hazards:** Cronamold (CW1098) must be thoroughly dried after installation, before exposure to molten metal or rapid heating to avoid steam build-up/explosive spalling.

**SECTION V - REACTIVITY DATA/HAZARDOUS DECOMPOSITION PRODUCTS**

**Incompatibility:** Hot Dam/pliojig may be incompatible with hydrofluoric acid and concentrated alkali.

**Hazardous Decomposition Products:** Hot Dam/pliojig- Very small amounts of cristobalite (CAS 14464-46-1) may be formed when Pliojig is used at temperatures above 1600°F for extended time periods. TLV for cristobalite = 0.05mg/m<sup>3</sup> (ACGIH). Carbon monoxide, carbon dioxide, oxides of nitrogen, reactive hydrocarbons and a trace amount of formaldehyde may accompany initial binder burnoff.

Cronamold (CW 1098) - Decomposition products include water and phosphoric acid vapors during initial heating.

For information on welding or brazing products, refer to the applicable Material Safety Data Sheet for the specific process/products being used. One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet, if worn, or in the worker's breathing zone. See ANSI/AWS F1 1, available from the American Welding Society, P O Box 351040, Miami, FL 33135.

**SECTION VI - HEALTH HAZARD DATA**

**Threshold Limit Value:** See Section II for TLV's for ingredients of these products. The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is 5 mg/M<sup>3</sup>. The ACGIH 1984-85 preface states: "The TLV-TWA should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section V for specific fume constituents which may modify this TLV.

**Effects of Overexposure:** FUMES AND GASES generated during use of this product, in conjunction with heating, welding, brazing or soldering procedures, can be dangerous to your health. Aggravation of preexisting respiratory or allergic conditions may occur in some workers. **SHORT-TERM (ACUTE) OVEREXPOSURE** May cause minor skin irritation/dryness **LONG-TERM (CHRONIC) OVEREXPOSURE** to nuisance dust from products may cause benign or inert pneumoconiosis, cough or dyspnea. **ARC RAYS** can injure eyes and burn skin. **ELECTRIC SHOCK** can kill. See Section VII.

**Medical Conditions Generally Aggravated by Exposure:** May aggravate respiratory problems.

Primary Routes of Entry	Acute and Chronic Health Effects and Effects of Overexposure:	First Aid and Medical Information:
Inhalation:	May cause temporary upper respiratory irritation.	Remove from area of exposure to location with fresh air.
Skin Contact:	Contact with free ceramic fibers may cause temporary skin irritation.	Wash affected areas with soap and water.
Eye Contact:	Contact with free ceramic fibers may cause temporary eye irritation.	Flush eyes with water for at least 15 minutes. Seek medical aid.
Ingestion:	Not normal route of entry. DO NOT INGEST.	DO NOT INDUCE VOMITING. Seek medical advice.

**Emergency & First Aid Procedures:** Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

#### SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE/APPLICABLE CONTROL MEASURES

Read and understand the manufacturer's instructions and the precautionary label on this product. See American National Standard Z49.1, Safety in Welding and Cutting, published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA Publication 2206 (29 CFR 1910), US Government Printing Office, Washington, DC, 20402 for more detail on the following:

**Storage and Handling:** Store in a tightly closed container in a cool, dry place, avoiding contact with extreme heat to maintain product quality. Avoid contact with eyes, skin or clothing. Use good housekeeping practices to prevent accumulations of dust or fumes. Wash hands after handling. Do not smoke, eat or drink in work area.

**Ventilation:** Trace amounts of organic binders will burn off during the first exposure to heat. Use enough ventilation, local exhaust at the work area, or both, to keep the dusts, fumes and gases below the TLV's in the worker's breathing zone and the general area. Train the worker to keep his head out of the fumes.

**Respiratory Protection:** Use NIOSH approved dust respirator or air supplied respirator when using product in confined space or when welding, brazing or soldering in confined space or where local exhaust or ventilation does not keep exposure below TLV.

**Eye Protection:** Use of safety glasses or goggles recommended when using this product to prevent particles getting into the eyes. Use proper protection if welding or brazing. Provide protective screens and flash goggles, if necessary, to shield others. When working with chemicals or polymer products, a safety eyewash station should be in close proximity.

**Protective Clothing:** Use gloves and aprons to avoid prolonged or repeated skin contact with chemicals and to protect clothing. When using product in conjunction with welding or brazing operation, wear head, hand and body protection which help prevent injury from radiation, sparks, heat and electrical shock. See ANSI Z49.1. At a minimum, this includes welder's gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch hot metals or live electrical parts and to insulate himself from work and ground.

**Procedure for Cleanup of Spills or Leaks:** Collect spilled material with a spatula type instrument for reclamation and reuse or disposal in sealed containers. Keep airborne dust at a minimum when cleaning up. Vacuum residue if possible.

**Waste Disposal Method:** Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.

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### SECTION VIII - REGULATORY DATA

#### REPORTING:

The chemicals reportable under Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) are shaded and noted with a "Y" in the "SECTION 313 REPORTING" column of Table 1 on Page 1.

HOT/DAM/

**PURSUANT TO PROPOSITION 65: WARNING; PLIOJIG contains silicon dioxide (CAS 60676-86-0) which may contain trace amounts of free respirable silica which is listed by the State of California as known to cause cancer. (California Health & Safety Code §25249.5 et seq.). All other products covered by this MSDS contain no substances listed by the State of California as known to cause cancer or reproductive harm.**

COMPONENTS ON TSCA INVENTORY (Y/N):



### SECTION IX - PREPARATION INFORMATION

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

**PREPARED BY:**

**DATE PREPARED:**  
March 2, 2001

**REVISION:**  
Revision 4

L.F.CLEAR HIGH SOLIDS PIPE COATING

Page: 1  
7/3/2007PRODUCT NAME: L.F.CLEAR HIGH SOLIDS PIPE COATING  
PRODUCT CODE: L-4042-CHMIS CODES: H F R P  
2 3 1

## SECTION I - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: Mahoning Paint Corporation  
ADDRESS : 653 JONES STREET  
YOUNGSTOWN, OHIO 44502EMERGENCY PHONE : 1-800-424-9300 DATE PRINTED : 7/3/2007  
INFORMATION PHONE : 1-330-744-2139 NAME OF PREPARER : Mahoning Paint Corp.

## SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE		WEIGHT PERCENT
		mm Hg	@ TEMP (F)	
* RESIN		2.86	68F	57
ALIPHATIC HYDROCARBON	64742-89-8	10.2	68	30
OSHA PEL: 300 PPM, ACGIH TLV: 300 PPM				
* MINERAL SPIRITS	8052-41-3	2	60 DEG F	5
* XYLENE	1330-20-7	9	68	2
OSHA PEL: 100 PPM, ACGIH TLV: 100 PPM				

\* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.  
VM & P NAPHTHA DOES NOT CONTAIN SECTION 313 REPORTABLE INGREDIENTS.

## SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE: 240-285 F - 315-398 F SPECIFIC GRAVITY (H2O=1): .9  
VAPOR DENSITY: LIGHTER THAN AIR EVAPORATION RATE: SLOWER THAN ETHER  
COATING V.O.C.: 2.8 lb/gal MATERIAL V.O.C.: 2.8 lb/gal  
SOLUBILITY IN WATER: N/A  
APPEARANCE AND ODOR: N/A

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 55 DEG F METHOD USED: T.C.C  
FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: .9 UPPER: 7

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG

## SPECIAL FIREFIGHTING PROCEDURES

WEAR APPROPRIATE PROTECTIVE EQUIPMENT. MOVE UNDAMAGED CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. NEVER USE A DIRECT STREAM OF WATER INTO THE FIRE. COOL FIRE-EXPOSED CONTAINERS WITH WATER. CLEAR AREA IMMEDIATELY.

## UNUSUAL FIRE AND EXPLOSION HAZARDS

KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, SPARKS, ELECTRICAL EQUIPMENT AND OPEN FLAME. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. CONTAINERS SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILD-UP, WHICH COULD RESULT IN CONTAINER RUPTURE.

## SECTION V - REACTIVITY DATA

STABILITY: STABLE  
CONDITIONS TO AVOID

STRONG OXIDIZING AGENTS, HEATS, SPARKS AND OPEN FLAMES.

**INCOMPATIBILITY (MATERIALS TO AVOID)**

NONE REASONABLY FORESEEABLE.

**HAZARDOUS DECOMPOSITION OR BYPRODUCTS**

COMBUSTION MAY YIELD CARBON DIOXIDE AND CARBON MONOXIDE. DO NOT BREATHE SMOKE OR FUMES. WEAR APPROPRIATE EQUIPMENT.

**HAZARDOUS POLYMERIZATION: WILL NOT OCCUR**

===== **SECTION VI - HEALTH HAZARD DATA** =====

**INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION. OTHER EFFECTS INCLUDE DIZZINESS, HEADACHE LOSS OF COORDINATION AND FATIGUE.

**SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

EYES-DIRECT CONTACT CAN CAUSE IRRITATION, REDNESS, AND TEARING. SKIN-PROLONGED OR REPEATED CONTACT MAY CAUSE REDNESS, BURNING, AND DRYING AND CRACKING OF THE SKIN. PERSONS WITH PRE-EXISTING SKIN DISORDERS MAY BE MORE SUSCEPTIBLE.

**SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

CONTACT MAY RESULT IN SKIN ABSORPTION, BUT SYMPTOMS OF TOXICITY ARE NOT ANTICIPATED BY THIS ROUTE ALONE UNDER NORMAL CONDITIONS.

**INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE**

INGESTIONS OF EXCESSIVE QUANTITIES MAY CAUSE IRRITATION OF THE DIGESTIVE TRACT. CAN CAUSE VOMITING, NAUSEA, DIARRHEA AND LOSS OF APPETITE. ASPIRATION(BREATHING) OF VOMITUS INTO THE THE LUNGS MUST BE AVOIDED.

**HEALTH HAZARDS (ACUTE AND CHRONIC)**

ACUTE; DIZZINESS, FATIGUE, DROWSINESS, NASAL AND RESPIRATION IRRITATION. CHRONIC: MALE RATS EXPOSED TO V M & P NAPHTHA BY PROLONGED AND REPEATED INHALATION TO HIGH VAPOR CONCENTRATIONS SHOWED EVIDENCE OF KIDNEY AND LIVER DAMAGE. THE RELEVANCE OF THIS EFFECT TO MAN IS UNKNOWN.

**CARCINOGENICITY: NTP CARCINOGEN: No IARC MONOGRAPHS: No OSHA REGULATED:**

No

VMP HAS NOT BEEN IDENTIFIED AS A CARCINOGEN BY NTP, IARC OR OSHA.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE**

PREEXISTING EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

**EMERGENCY AND FIRST AID PROCEDURES**

CALL PHYSICIAN. INGESTION: DRINK 1-2 GLASSES OF WATER TO DILUTE. DO NOT INDUCE VOMITING. GIVE 1-2 TABLESPOONS OF VEGETABLE OIL. IF VICTIM IS DROWSY OR UNCONSCIOUS, PLACE ON THE LEFT SIDE WITH THE HEAD DOWN. INHALATION: REMOVE TO FRESH AIR. ADMINISTER OXYGEN IF BREATHING IS DIFFICULT AND GIVE ARTIFICIAL RESPIRATION IF BREATHING IS INTERRUPTED. KEEP VICTIM WARM AND QUIET. EYES: FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. SKIN: REMOVE CONTAMINATED CLOTHING/SHOES. FLUSH SKIN WITH WATER. FOLLOW BY WASHING WITH SOAP AND WATER.

===== **SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE** =====

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**



EVACUATE AREA. KEEP ALL SOURCES AWAY FROM SPILL. IF SPILL IS INDOORS, VENTILATE AREA OF SPILL. USE SAND OR OTHER INERT MATERIAL TO CONFINE SPILL. DO NOT FLUSH AREA WITH WATER. NOTIFY APPROPRIATE AUTHORITIES IMMEDIATELY.

**WASTE DISPOSAL METHOD**

DISPOSE OF PRODUCT IN ACCORDANCE WITH LOCAL, COUNTY, STATE AND FEDERAL REGULATIONS.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

KEEP CONTAINERS TIGHTLY CLOSED. USE AND STORE THIS MATERIAL IN COOL, DRY, WELL-VENTILATED AREA AWAY FROM HEAT AND ALL SOURCES OF IGNITION. POST AREA "NO SMOKING OR OPEN FLAME." STORE ONLY IN APPROVED CONTAINERS. PROTECT CONTAINERS FROM PHYSICAL DAMAGE. AVOID INHALATION OF VAPORS AND PERSONAL CONTACT WITH THIS MATERIAL.

**OTHER PRECAUTIONS**

DO NOT PRESSURIZE, CUT, WELD, BRAZE, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION. THE USE OF RESPIRATORY PROTECTION IS ADVISED WHEN CONCENTRATIONS EXCEED ANY ESTABLISHED EXPOSURE LIMITS. (SEE SECTION I). WASH THOROUGHLY AFTER HANDLING.

===== **SECTION VIII - CONTROL MEASURES** =====

**RESPIRATORY PROTECTION**

THE USE OF RESPIRATORY PROTECTION IS ADVISED WHEN CONCENTRATIONS EXCEED THE ESTABLISHED EXPOSURE LIMITS (SEE SECTION I). DEPENDING ON THE AIRBORNE CONCENTRATION, USE A RESPIRATOR OR GAS MASK WITH APPROPRIATE CARTRIDGES AND CANNISTERS. NIOSH APPROVED IS HIGHLY RECOMMENDED.

**VENTILATION**

USE ONLY WITH VENTILATION SUFFICIENT TO PREVENT EXCEEDING RECOMMENDED EXPOSURE LIMIT OR BUILDUP OF EXPLOSIVE CONCENTRATIONS OF VAPOR IN AIR. NO SMOKING. LOCAL EXHAUST IS RECOMMENDED.

**PROTECTIVE GLOVES**

USE CHEMICAL-RESISTANT GLOVES, IF NEEDED, TO AVOID PROLONGED OR REPEATED SKIN CONTACT.

**EYE PROTECTION**

APPROVED EYE PROTECTION IS ADVISED TO AVOID POTENTIAL EYE CONTACT, IRRITATION OR INJURY. SPLASH GOGGLES/FACE SHIELD.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT**

IT IS SUGGESTED THAT A SOURCE OF CLEAN WATER BE AVAILABLE IN THE WORK AREA FOR FLUSHING EYES AND SKIN. IMPERVIOUS CLOTHING SHOULD BE WORN AS NEEDED.

**WORK/HYGIENIC PRACTICES**

WASH HANDS BEFORE EATING OR SMOKING.

===== **SECTION IX - DISCLAIMER** =====

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BELIEVED TO BE RELIABLE AND ACCURATE BASED ON THE DATA AVAILABLE TO US, HOWEVER, WE MAKE NO WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS OBTAINED FROM THE USE OF THIS PRODUCT.



700169

# MATERIAL SAFETY DATA SHEET

## NOBURST<sup>®</sup> -100

### 1. General

<b>Trade Name</b>	NOBURST <sup>®</sup> -100	<b>Date Prepared:</b> 5/01/07	
<b>Manufacturer's Name</b>	THE NOBLE COMPANY		
<b>Address</b>	7300 Enterprise Drive Spring Lake, MI 49456		
<b>Emergency Telephone Number</b>	(231) 799-8000		
<b>Telephone Number for Information</b>	(231) 799-8000		
<b>Synonyms</b>	None		
<b>Chemical Family</b>	Glycols		
<b>Generic Name</b>	Monopropylene Glycol		
<b>DOT Hazardous Material Proper Shipping Name</b>	Not regulated		
<b>DOT Hazard Class</b>	<b>DOT Packing Group</b>	<b>DOT Reportable Quantity (Based on Material)</b>	<b>UN/NA ID No.</b>
Not regulated	Not regulated	Not applicable	Not regulated
<b>CAS No. (See Section 9 – Components)</b>			<b>MSDS Class F</b>

### 2. Summary of Hazards

<b>Signal Word</b>	CAUTION
<b>Physical Hazards</b>	Aqueous solutions may produce flammable vapors Slightly combustible liquid
<b>Acute Health Effects (Short-Term)</b>	No inhalation hazard identified from data available; Slight eye irritant; No ingestion hazard identified from data available; No skin irritation hazard identified from data available; No skin absorption hazard identified from data available
<b>Chronic Health Effects (Long-Term)</b>	No chronic health hazards are expected to occur from anticipated conditions of normal use of this material

### 3. Fire and Explosion

<b>Flash Point</b> AP 228° F (PMCC)	<b>Autoignition Temperature</b> AP 700° F	<b>Flammable Limits</b> (at Normal Atmospheric Temp and Pressure) Lower: AP 2.4 (% vol in air) Upper: AP 17.4 (% vol in air)
<b>Fire and Explosion Hazards</b>	Heat from fire can generate flammable vapor. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Vapors may travel long distances along the ground before igniting and flashing back to vapor source. Fine sprays/mists may be combustible at temperatures below normal flash point. Aqueous solutions containing less than 95% propylene glycol by weight have no flash point as obtained by standard test methods. However aqueous solutions of propylene glycol greater than 22% by weight, if heated sufficiently, will produce flammable vapors. Always drain and flush systems containing propylene glycol with water before welding or other maintenance.	
<b>Extinguishing Media</b>	Alcohol type foam CO <sub>2</sub> Dry chemical	
<b>Extinguishing Media Use Comment</b>	Use waterspray/waterfog for cooling	
<b>Special Firefighting Procedures</b>	Do not enter fire area without proper protection. Fight fire from a safe distance/protected location. Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Use water spray/fog for cooling. Avoid frothing/steam explosion. Burning liquid may float on water. Although water-soluble, may not be practical to extinguish fire by water dilution. Notify authorities immediately if liquid enters sewer/public waters.	

### 4. Health Hazards

<b>Summary of Acute Hazards</b>	Not expected to present a significant acute health hazard upon short-term exposure.	
<b>ROUTE OF EXPOSURE</b>	<b>SIGNS AND SYMPTOMS</b>	<b>PRIMARY ROUTE(S)</b>
<b>Inhalation</b>	No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of inhalation exposure.	NO
<b>Eye Contact</b>	May cause minor eye irritation.	Yes
<b>Skin Absorption</b>	No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin absorption exposure.	NO
<b>Skin Irritation</b>	No significant signs or symptoms indicative of any adverse health hazard are expected to occur as a result of skin exposure.	NO
<b>Ingestion</b>	No significant signs or symptoms indicative of any health hazard are expected to occur as a result of ingestion.	NO
<b>Summary of Chronic Hazards</b>	No adverse chronic health effects are expected from anticipated conditions of normal use of this material, unless aerosol is generated.	
<b>Special Health Effects</b>	This material or its emissions may aggravate pre-existing eye disease.	

### 5. Protective Equipment and Other Control Measures

<b>Respiratory</b>	No special respiratory protection is recommended under anticipated conditions of normal use with adequate ventilation.
<b>Eye</b>	Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses must be worn.
<b>Skin</b>	Not normally considered a skin hazard. Where use can result in skin contact, practice good personal hygiene. Wash hands and other exposed areas with mild soap and water before eating, drinking, smoking, and when leaving work.
<b>Engineering Controls</b>	No special ventilation is recommended under anticipated conditions of normal use beyond that needed for normal comfort control.
<b>Other Hygienic Practices</b>	Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.
<b>Other Work Practices</b>	No special work practices are needed beyond the above recommendations under anticipated conditions of normal use.

### 6. Occupational Exposure Limits

<u>Substance</u>	<u>Source</u>	<u>Date</u>	<u>Type</u>	<u>Value/Units</u>	<u>Time</u>	<u>Skin</u>
No occupational exposure limit(s) have been established for this material or its components						
<b>Exposure Limit</b>	No additional Occupational Exposure Limit information available					
<b>Comments</b>						

### 7. Emergency and First Aid

<b>Inhalation</b>	Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
<b>Eye Contact</b>	In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention if pain, blinking, tears or redness persists.
<b>Skin Contact</b>	Not expected to present a significant skin hazard under anticipated conditions of normal use.
<b>Ingestion</b>	Not expected to present a significant ingestion hazard under anticipated conditions of normal use.
<b>Physician's Emergency Medical Treatment Procedures</b>	Treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. After adequate first aid, no further treatment is required unless symptoms reappear.
<b>Physician's Detoxification Procedures</b>	No detoxification information available.

### 8. Spill and Disposal

**Precautions if Material is Spilled or Released**

May contaminate water supplies/pollute public waters. Evacuate/limit access. Equip responders with proper protection. Prevent flow to sewer/public waters. Stop release. Notify fire and environmental authorities. Restrict water use for cleanup. Slippery walking. Spread granular cover. Impound/recover large land spill. Soak up small spills with inert solids. Use suitable disposal containers. On water, material is soluble and may float or sink. May biodegrade. Contain/collect rapidly to minimize dispersion. Disperse residue to reduce aquatic harm. Report per regulatory requirements.

**Waste Disposal Methods**

Landfill solids at permitted sites. Use registered transporters. Burn concentrated liquids, diluting with clean, low viscosity fuel. Avoid flameouts. Assure emissions comply with applicable regulations. Dilute aqueous waste may biodegrade. Avoid overloading/ poisoning plant biomass. Assure effluent complies with applicable regulations. Contaminated product, soil, water, container residues and spill cleanup materials should not be designated as hazardous wastes.



**9. Components**

(This may not be a complete list of components)

(Compositions given are typical values, not specifications.)

<u>Component Name</u>	<u>CAS No.</u>	<u>Carcinogen ###</u>
Propylene Glycol	57-55-6	N/P
Dipotassium Phosphate	7758-11-4	N/P

###1=U.S. National Toxicological Program 2=International Agency for Research on Cancer 3=U.S. Occupational Health and Safety Administration 4=American Conference of Governmental Industrial Hygienists 9=Other N/P=No Applicable Information Found

**10. Component Health Hazards**

<u>Component</u>	<u>Component Health Hazards</u>
Propylene Glycol	Slight eye irritant

**11. Additional Toxicological Information**

**Component Name/Comments**

**Propylene Glycol**

High concentrations of Propylene Glycol in water when held in contact with human skin under closed conditions have been reported to cause skin irritation (Cosmetics and Toiletries 99:83-91, 1984). The authors attribute the observations to a sweat retention reaction by skin. No reactions were observed in open patch tests with human subjects. One literature report indicates rare eczematous skin reactions and even more rarely an allergic skin reaction from exposure to Propylene Glycol (Anderson and Starr, Hautzart 33 (1) 382).

**Material**

No additional toxicology information is available for this material.

**12. Physical and Chemical Data**

<b>Boiling Point</b> AP 370°F (at 760 mm Hg)	<b>Viscosity</b> AP 46 CPS (at 77°F) (Brookfield)	<b>Dry Point</b> AP 374°F
<b>Freezing Point</b> AP > -50°F	<b>Vapor Pressure</b> AP 0 mm Hg (at 68°F)	<b>Volatile Characteristics</b> Slight
<b>Specific Gravity</b> AP 1.04 (H <sub>2</sub> O=1.0 at 39.2°F)	<b>Vapor Specific Gravity</b> AP 2.6 (Air =1.0 at 60-90°F)	<b>Solubility in Water</b> Complete (In All Proportions)
<b>pH</b> 9	<b>Hazardous Polymerization</b> Not expected to occur	<b>Stability</b> Stable
<b>Other Chemical Reactivity</b>	Reacts with strong oxidizing agents	
<b>Other Physical and Chemical Properties</b>	Hygroscopic	
<b>Appearance and Odor</b>	Pink; Slightly viscous liquid; Little or no odor	
<b>Conditions to Avoid</b>	High temperatures, oxidizing conditions	
<b>Materials to Avoid</b>	Strong oxidizing agents	
<b>Hazardous Decomposition Products</b>	Incomplete combustion may produce carbon monoxide and other toxic gases	

### 13. Hazards Rating Information

#### National Fire Protection Association

Health = 0 Flammability = 0 Reactivity = 0 Special Hazard – None

Ratings have been based on available component information from the National Fire Protection Association.

#### National Paint and Coatings Association

##### Hazardous Material Information System (HMIS)

Health = 0 Flammability = 0 Reactivity = 0 Personal Protection = A

Ratings have been generated according to criteria specified in the National Paint and Coatings Association Implementation Manual based on component information available.

### 14. Additional Precautions

#### Handling and Storage Procedures

Hygroscopic. Use dry nitrogen or low dew point air for tank padding. Keep drums tightly closed to prevent contamination. Store at 65-90° F.

#### Decontamination Procedures

Isolate, vent, drain, wash and purge systems or equipment before maintenance or repair. Wear recommended personal protective equipment. Observe precautions pertaining to confined space entry.

### 15. Regulatory Information

#### Federal

#### Toxic Substance Control Act (TSCA)

The following is the Toxic Substances Control Act (TSCA) Chemical Substance Inventory Status of the components of this material listed in Section 9 – Components:

CHEMICAL	CAS NO.	STATUS
Propylene Glycol	57-55-6	Listed – Non Confidential
Dipotassium Phosphate	7758-11-4	Listed - Non Confidential

#### Superfund Amendments and Reauthorization of 1988 (SARA), Title III

##### -Section 302/304

Requires emergency planning based on 'Threshold Planning Quantities' (TPQs), and release reporting based on Reportable Quantities (RQs) of 'Extremely Hazardous Substances' (EHS) listed in Appendix A of 40 CFR 355. There are no components of this material with known CAS numbers which are on the EHS list.

##### -Section 311 & 312

Based upon available information, this material and/or components are not classified as any of the specific health and/or physical hazards defined by Section 311 & 312.

##### -Section 313

The material does not contain any chemical components with known CAS numbers that exceed the De Minimis reporting levels established by SARA Title III, Section 313 and 40 CFR 372.

#### Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

## NOBURST® -100 (CON'T.)

to chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA.

### OSHA Regulations

'Chemical-specific' U.S. Occupational Safety and Health Administration (OSHA) regulations (1910.1002 to 1910.1050) presented under 29 U.S. Code of Federal Regulations (CFR) 1910 do not apply to this material or its components.

### Other EPA Regulations

No additional information available

### Department of Transportation (DOT)

Other than the normal shipping instructions and information given in this MSDS, there is no other specific U.S. Department of Transportation (DOT) regulations governing the shipment of this material.

### State Regulations:

#### California Safe Drinking Water and Toxic Enforcement Act of 1988 – Proposition 65

This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins under California Proposition 65 at levels which would be subject to the proposition.

#### California South Coast Air Quality Management District (SCAQMD) Rule 443.1 (VOC's)

A Volatile Organic Compound (VOC) is any volatile compound of carbon excluding methane, carbon monoxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, 1,1,1-trichloroethane, methylene chloride, (FC-23), (CFC-113), (CFC-12), (CFC-11), (CFC-22), (CFC-114), and (CFC-115). By this definition, this is a VOC material.

#### Massachusetts Right to Know Substance List (MSL) [105 CMR 670.000]

Extraordinarily Hazardous Substances (MSL-EHS) must be identified when present in materials at levels greater than state specified criterion. The criterion is  $\geq 0.0001\%$ . Hazardous Substances (MSL-HS) on the MSL must be identified when present in materials at greater than the state specified criterion. The criterion is  $\geq 1\%$ . Components with CAS numbers present in this material, at levels specified in Section 9 – Components, do not require reporting under the statute.

#### New Jersey Registration

The New Jersey, Registry 3, Registration law does not apply to this material, as none of its components are trade secrets.

#### Pennsylvania Right to Know Hazardous Substance List

Hazardous Substances (PA-HS) must be identified when present in materials at levels greater than the state specified criterion. The criterion is  $\geq 1\%$ . Components with CAS numbers in this material at a level which could require reporting under the statute are:

CHEMICAL	CAS NO.
Propylene Glycol	57-55-6
Dipotassium Phosphate	7758-11-4

Special Hazardous Substances (PA-SHS) must be identified when present in materials at levels greater than the state specified criterion. The criterion is  $\geq 0.01\%$ . Environmental Hazards (PA-EH) must be identified when present in material at levels greater than the state specified criterion. The criterion is  $\geq 0.01\%$ . Components with CAS numbers in this material, at levels specified in Section 9 – Components, do not require reporting under the statute.

#### Regulatory Advisory

If you reformulate or further process this material, you should consider re-evaluation of the regulatory status of the components listed in this sheet.



<b>16. General Comments</b>
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**General Comments**

This document is generated for the purpose of distributing health, safety, and environmental data. It is not a specification sheet nor should any displayed data be construed as a specification.

**Other Comments**

No additional information available.

Note	EQ=Equal	AP=Approximately	N/P=No Applicable Information Found
Qualifications:	LT=Less Than	UK=Unknown	N/AP=Not Applicable
	GT=Greater Than	TR=Trace	N/DA=No Data Available

**DISCLAIMER OF LIABILITY:**

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the material are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the material.

This MSDS was prepared and is to be used only for this material. If the material is used as a component in another material, this MSDS information may not be applicable. This document is generated for the purpose of distributing health, safety, and environmental data. It is not a specification sheet nor should any displayed data be construed as a specification. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the material itself.

THE INFORMATION PRESENTED HEREIN, WHILE NOT GUARANTEED, WAS PREPARED BY TECHNICALLY KNOWLEDGEABLE PERSONNEL AND TO THE BEST OF OUR KNOWLEDGE IS TRUE AND ACCURATE. IT IS NOT INTENDED TO BE ALL-INCLUSIVE, AND THE MANNER AND CONDITIONS OF USE AND HANDLING MAY INVOLVE OTHER OR ADDITIONAL CONSIDERATIONS. CONSULT THE NOBLE COMPANY FOR FURTHER INFORMATION.



# MATERIAL SAFETY DATA SHEET

**Section I- Product and Manufacturer Identification**  
**RUBATEX R-373 RUBBER INS. ADHESIVE**  
 RBX INDUSTRIES, INC.  
 5221 VALLEY PARK DRIVE  
 ROANOKE, VA 24019  
 1-800-378-4091 EXT 4364  
 EMERGENCY ONLY CONTACT:  
 CHEM-TEL: 1-800-255-3924  
**PREPARED 11/13/01**

**Section II- HMIS**  
**HMIS CODES- (0 =minimal hazard; 4= severe hazard)**  
 Health = 2 Flammability = 3 Reactivity = 0

**Section III- Physical Chemical Characteristics**  
 BOILING RANGE – 132 deg F.-231-F. VAPOR DENSITY: Heavier than air. SOLUBILITY IN WATER: No, APPEARANCE AND ODOR: blue, offensive SPECIFIC GRAVITY (H2)=1: 0.82 EVAPORATION RATE: slower than ether  
 VOC content: 336 g/L; calculated and reported ,SCAQMD 1168

Section IV – Hazardous Ingredients	Weight				Vapor Pressure	
	Reportable Components	C.A.S. No.	%	OSHA PEL	ACGIH TLV	mm HG &Temp
Acetone	67-64-1	35	750	750	186	68
Normal Hexane	110-54-3	15	50 ppm	50 ppm	140	100
Toluene	108-88-3	16	200	50	28	77
Methyl Pentane	107-83-5	5	500	400	320	100
3-Methyl Pentane	96-14-0	5	500	400	320	100

**Section V- Fire and Explosion Hazard Data** –FLASH POINT –20 deg F. METHOD USED: TCC FLAMMABLE LIMITS IN AIR BY VOLUME – LOWER:1 UPPER 13 - EXTINGUISHING MEDIA: foam, CO2, Dry chemical –SPECIAL FIREFIGHTING PROCEDURES – Respiratory equipment should be worn to avoid inhalation of concentrated vapors. Water should not be used except as fog to keep nearby containers cool. UNUSUAL FIRE AND EXPLOSION HAZARDS: Handle as flammable liquid. Vapors form an explosive mixture in air between the upper and lower explosive limits which can be ignited by Manu sources such as pilot lights, open flames, electrical motors and switches.

**Section VI- Reactivity Data** – STABILITY-stable CONDITIONS TO AVOID –Excessive, heat poor ventilation, corrosive atmospheres, excessive aging INCOMPATIBILITY (MATERIALS TO AVOID) Alkaline materials, strong acids and oxidizing materials. HAZARDOUS DECOMPOSITION OR BYPRODUCTS- Carbon monoxide, carbon dioxide, oxides of nitrogen, and possible acrolein. HAZARDOUS POLYMERIZATION: Will not occur

**Section VII – Health Hazard Data** – INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE-Inhalation, dizziness, breathing difficulty, headaches, & loss of coordination. SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: skin contact can dry and deface skin causing cracks, irritation, and dermatitis, eye contact, severe irritation, tearing redness, and blurred vision. SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE – See above INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE- can cause gastrointestinal irritation, vomiting, nausea, and diarrhea. HEALTH HAZARDS (ACUTE AND CHRONIC) Inhalation dizziness, breathing difficulty, headaches, & loss of coordination. Eye contact: Severe irritation, tearing, redness, and blurred vision. Skin Contact: Can dry and defat skin causing cracks, irritation, and dermatitis. Ingestion: Can cause gastrointestinal irritation, vomiting, nausea, & diarrhea. CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS. CARCINOGENICITY: NTP CARCINOGEN: No IARC MONOGRAPHS: No OSHA REGULATED: No MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Anesesia, respiratory tract irritation dermatitis, nausea, vomiting. EMERGENCY AND FIRST AID PROCEDURES- Inhalation overexposure; move person to fresh air. If breathing stops, apply artificial respiration and seek immediate medical attention. Eye contact: Flush with large quantities of water for 15 minutes. Skin Contact: Wash thoroughly with soap and water and see a doctor. Ingestion: Do not induce vomiting, can cause chemical pneumonitis edema. Contact a physician immediately.

**SectionVIII –Precautions for Safe Handling and Use-** STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED- Eliminate ignition sources, provide good ventilation, dike spill area and use absorbent material to cleanup. WASTE DISPOSAL METHOD-Collect absorbant/spilled liquid mixture and place into metal containers. Consult Local, State & Federal hazardous waste regulations before disposing into approved hazardous waste landfills. Obey relevant laws. PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Use non-sparking utensils when handling this material. Avoid hot metal surfaces, use in cool well-ventilated areas. Keep containers closed when not in use. Keep away from excessive heat and open flames. OTHER PRECAUTIONS- Smoking in areas where this material is used should be strictly prohibited. Tools used with this material should be made of aluminum, brass, or copper. Plastic utensils should not be used.

**Section IX-Control Measures** — RESPIRATORY PROTECTION -When spraying this adhesive use a NIOSH approved cartridge respirator or gas mask suitable to keep air-born mists and concentrations below the time-weighted threshold limit values. When using in poorly ventilated and confined spaces, use a fresh-air supplying respirator on a self-contained breathing apparatus. VENTILATION- General Mechanical Ventilation or local exhaust should be suitable to keep vapor concentrations below TLV. Ventilation equipment must be explosion proof. PROTECTIVE GLOVES: - Impermeable chemical handling gloves for skin Protection. EYE PROTECTION – Use chemical safety glasses, goggles, and face shields for eye protection. OTHER PROTECTIVE CLOTHING OR EQUIPMENT- Use permeable aprons and protective clothing whenever possible to prevent skin contact. The use of head caps whenever possible is strongly recommended. WORK/HYGIENIC PRACTICES – Eye washes and a safety shower in the workplace is recommended.

**Section X – Disclaimer** – The above information is accurate to the best of our knowledge. However, since data, safety standards and Government Regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, RUBATEX make no warranty, either expresses or implied with respect to the completeness or accuracy of this information.



# PRODUCT INFORMATION

## Classification, Composition and Properties

Date of issue 26.05.1988		Trade name Rems Spezial	
Manufacturer/Supplier Zeller+Gmein GmbH & Co		Chemical or technical name Metal working oil	
Address Schloßstr. 20 D-7332 Efslingen/Fils		Information issued by/contact person/department Bukowski, D 07161/802-297	
		Phone No.	

### CLASSIFICATION ACCORDING TO SWEDISH LEGISLATION

Product hazardous to health		Inflammable product	
<input type="checkbox"/> Poison	<input type="checkbox"/> Hazardous other than poison	<input checked="" type="checkbox"/> No	<input type="checkbox"/> 1 <input type="checkbox"/> 2a <input type="checkbox"/> 2b <input type="checkbox"/> 3
Explosive		<input type="checkbox"/> Inflammable gas	
<input checked="" type="checkbox"/> No		<input checked="" type="checkbox"/> No	
Labeling sub-classes - product hazardous to health		Explosive product	
Class 1 <input type="checkbox"/> Class 2 <input type="checkbox"/> Class 3 <input type="checkbox"/> Reg. No. <input checked="" type="checkbox"/> No		Transp. class <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E	
none		<input checked="" type="checkbox"/> No	
<input type="checkbox"/> Very toxic	<input type="checkbox"/> Highly corrosive	none	
<input type="checkbox"/> Toxic	<input type="checkbox"/> Corrosive	none	
	<input type="checkbox"/> Irritant	<input type="checkbox"/> Extremely/highly inflammable	
	<input type="checkbox"/> Harmful	<input type="checkbox"/> Explosive	
	<input type="checkbox"/> May be harmful	<input type="checkbox"/> Oxidizing	

### TRANSPORTATION CLASSIFICATION

UN	IMDG (sea)	ADR/RID (road, rail)	BCR (air)
none	none	none	none
Packaging group	Class	Page	EMS No
			MFAG No
			Class
			Item

### INFORMATION ON COMPOSITION

A. Substances which give the product its health-risk properties, if any. State if possible CAS No.

Content	TLV	Remarks
Lubricating Oils 72623-85-9	40 - 60	
B. Other substances		
Chloroparaffines 61788-76-9	1 - 10	
Triglycerides 68002-71-1	20 - 60	

### PHYSICO-CHEMICAL PROPERTIES

General description (form, colour, smell, viscosity):  
 form: liquid, colour: brown, odour: like mineral oil, viscosity: 14 mm<sup>2</sup>/s/50°C

Bailling point n.d. °C	Solidif./melt point n.d. °C	Density 940 kg/m <sup>3</sup>	Rel. vap. dens. (air = 1)
Flash point > 160 °C	Auto-ignition temp. n.d. °C	Explosive limits in air 0,6/6,5 vol %	Solubility in organic solvents
Vapour pressure at 20 °C < 0,1 mbar	pH in concentrate n.d.	Rel. evaporation rate n.d.	Solubility in water at °C weight %
Specific properties or risks	pH in dilution as used ( = %)	Ether = 1: - BuAc = 100: -	

none at appropriate storage and handling

### BIOLOGICAL PROPERTIES

If applied properly no negative experience could be made.

### OTHER INFORMATION

Water incompatible (class: 3)

n.a.: not applicable, n.d. not determined

This form has been prepared by Kemikalkontroll (The Association of Swedish Chemical Industries) and DVI (The Swedish Plaster and Chemicals Dealers Association) in collaboration with I.O (The Swedish Trade Union Confederation), SAF (The Swedish Employers' Confederation), KTF (Cosmetic, Toilet and Household Products Association), SFI (Swedish Petroleum Institute) and SVRFF (Swedish Paint Association) after consultation with the National Board of Occupational Safety and Health. The form and instructions on how to fill it can be obtained from Kemikalkontroll, Företag 48, Box 5001, 114 85 Stockholm, or PKF, Box 5012, 114 85 Stockholm.

# INFORMATION ON RISKS AND SAFETY PRECAUTIONS

Date of issue: <b>26.05.1988</b>		Trade name: <b>Rems Spezial</b>	
Type of product/usage: <b>Metal working oil</b>		Buyer's denomination of product:	
		Checked at the buyer's by:	Date:
Labelling	Main text	Danger symbol	
	<b>As for dangerous material, product is not subject to designation.</b>	<b>none</b>	
Health hazard (inhalation, ingestion, contact with skin or eyes)			
<p>The product doesn't cause any health hazard if applied properly.</p> <p>At continuous contact the skin might irritate.</p>			
Fire and explosion hazard			
<p>In case of fire use gas mask and breathing equipment, as separation of hydrochloric acid is possible.</p> <p>No explosion hazard (no danger under normal conditions).</p>			
Preventive measures			
<p>Not necessary under normal conditions.</p>			
Personal protective equipment			
<p>At long skin contact protective gloves are to be used.</p> <p>Protective glasses at danger of spray in the eyes.</p>			
First aid			
Inhalation			
Skin contact			
<p>Wash with soap and warm water.</p>			
Eye contact			
<p>Rinse with plenty of warm water, consult doctor.</p>			
Ingestion			
<p>Due to aspiration hazard do not provoke vomiting, consult doctor.</p>			
Emergency action in case of fire			
<p>Extinguishing agents: carbon dioxide, foam, powder, type extinguishing agent</p>			
Spillage and decontamination			
<p>Pick up with liquid-binding material and dispose according to the law of waste disposal.</p>			
Internal information by the buyer			

**Medical Conditions Generally Aggravated by Exposure:** None

**Primary Routes of Entry:**

**Inhalation:** Contact with free ceramic fibers may cause temporary respiratory irritation.

**Skin Contact:** Contact with free ceramic fibers may cause temporary skin irritation.

**Eye Contact:** May cause temporary eye irritation.

**Ingestion:** Not normally considered to cause damage to digestive system. DO NOT INGEST.

**Emergency & First Aid Procedures:** Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

**Inhalation:** Remove from area of exposure to location with fresh air.

**Skin Contact:** Wash affected areas with soap and water.

**Eye Contact:** Flush eyes with water for at least 15 minutes. Seek medical aid.

**Ingestion:** DO NOT INDUCE VOMITING. Seek medical advice.

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**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE/APPLICABLE CONTROL MEASURES**

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Read and understand the manufacturer's instructions and the precautionary label on this product. For information relating to heating, welding and brazing operations, see American National Standard Z49.1, Safety in Welding and Cutting, published by the American Welding Society, P.O. Box. 351040, Miami, FL 33135 and OSHA Publication 2206 (29 CFR 1910), U. S. Government Printing Office, Washington, D.C. 20402.

**Storage and Handling:** Store in a tightly closed container in a cool, dry place, avoiding contact with extreme heat to maintain product quality. Avoid contact with eyes, skin or clothing. Use good housekeeping practices to prevent accumulations of dust or fumes. Wash hands after handling. Do not smoke, eat or drink in work area.

**Ventilation:** Use enough ventilation, local exhaust at the work area, or both, to keep the fumes and gases below the TLV's in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.

**Respiratory Protection:** Use NIOSH approved vapor respirator or air supplied respirator when using product in confined space or when welding, brazing or soldering in confined space or where local exhaust or ventilation does not keep exposure below TLV.

**Eye Protection:** Use of safety glasses or goggles recommended when using this product to prevent particles getting into the eyes. Use proper protection if welding or brazing. Provide protective screens and flash goggles, if necessary, to shield others. When working with chemicals or polymer products, a safety eyewash station should be in close proximity.

**Protective Clothing:** Use chemical resistant gloves and aprons to avoid prolonged or repeated skin contact with chemicals and polymer products and to protect clothing. When using product in conjunction with welding or brazing operations, wear head, hand and body protection which help prevent injury from radiation, sparks, heat and electrical shock. See ANSI Z49.1. At a minimum, this includes welder's gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch hot metals or live electrical parts and to insulate himself from work and ground.

**Procedure for Cleanup of Spills or Leaks:** Collect spilled material with a spatula type instrument for reclamation or disposal in sealed containers. Keep airborne dust at a minimum when cleaning up.

MSDS 029, Revision #2

Original Issue 06/27/88  
Revision date 3/28/91

Waste Disposal Method: Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.

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The information contained herein is based on data considered accurate, However no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.



**U.S. Department of Labor**  
 Occupational Safety and Health Administration



OMB No 1218-0074  
 Expiration Date 05/31/86

**Section I**

Manufacturer's Name

Zeller+Gmelin GmbH & Co, Mineralöl- und Chemiewerk

Emergency Telephone Number

07161/802-1

Address (Number, Street, City, State, and ZIP Code)

Schloßstraße 20

Chemical Name and Synonyms

metal working fluid

Postfach 12 80

Trade Name and Synonyms

Rems Spezial

7332 Eislingen/Fils

Chemical Family

mineral oil product

Formula

**Section II - Hazardous Ingredients**

Paints, Preservatives, and Solvents

% TLV (Units) Alloys and Metallic Coatings

	% TLV (Units)	% TLV (Units)
Pigments		Base Metal
Catalyst		Alloys
Vehicle		Metallic Coatings
Solvents		Filler Metal Plus Coating or Core Flux
Additives		Others
Others		

Hazardous Mixtures of Other Liquids, Solids or Gases

% TLV (Units)

**Section III - Physical Data**

Boiling Point (°F)	over 380	Specific Gravity (H <sub>2</sub> O=1)	0,940
Vapor Pressure (mm Hg)	below 0,1 mbar	Percent Volatile by Volume (%)	0
Vapor Density (AIR=1)		Evaporation Rate	
Solubility in Water	emulsifying		

Appearance and Odor

brown liquid, oily odor

**Section IV - Fire and Explosion Hazard Data**

Flash Point (Method Used)	320°F DIN 51 758	Flammable Limits	over 350°F	Let	Let
Extinguishing Media	CO <sub>2</sub> , foam, dry chemical				
Special Fire Fighting Procedures					

Unusual Fire and Explosion Hazards

**PACKAGE**

722

Threshold Limit Value

Effects of Overexposure

Like mineral oil products

Emergency First Aid Procedures

Flush skin and eyes with water

Section VI - Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid)

Avoid oxidation materials

Hazardous Decomposition Products

over 320°F (HCL)

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VII - Spill or Leak Procedures

Steps to be Taken in Case Material is Released or Spilled

Clean up with absorbent material

Waste Disposal Method

Incinerate

Section VIII - Special Protection Information

Respiratory Protection (Specify Type)

Ventilation	Local Exhaust	Special
	Mechanical (General)	Other

Protective Gloves

Eye Protection

Other Protective Equipment

Section IX - Special Precautions

Precautions to be Taken in Handling and Storing

Like mineral oil products

Other Precautions

# ROYSTON<sup>®</sup> DIVISION OF CHASE CORPORATION

## MATERIAL SAFETY DATA SHEET

**Product:** Roskote A-51 Plus Mastic

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MANUFACTURED BY:** ROYSTON DIVISION OF CHASE CORP.  
128 FIRST STREET  
PITTSBURGH, PA 15238

**GENERAL INFORMATION:** (412) 828-1500

**EMERGENCY, CHEMTREC:** 800-424-9300, Only in the event of chemical emergencies involving a spill, leak, fire, exposure or any accident involving chemicals. Outside USA: (703) 527-3887

**REVISION DATE:** January 17, 2007  
**PREPARED BY:** Frederick F. Fischer, Jr.

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS NUMBER	IDENTIFICATION	APP. % BY WGT.
108-88-3	Toluene	30-40
78-93-3	Methyl Ethyl Ketone	< 5
65996-93-2	Coal Tar Pitch*	45-50
8007-42-2	Coal Tar Pitch*	< 5
25036-25-3	Epoxy Resin	< 5
12001-26-2	Mica**	5-10
14807-96-6	Talc**	< 5

\* Listed as known Carcinogen  
\*\* Respiratory dust

### 3. HAZARDOUS IDENTIFICATION

**HAZARDOUS POLYMERIZATION:** Will Not Occur

**ROUTES OF EXPOSURE:** Inhalation, Skin, Eyes and Ingestion.

**IMMEDIATE EFFECTS:**

**INHALATION:** Causes irritation of nasal passages and throat. Causes stupor (central nervous system depression).

**SKIN CONTACT:** Can cause moderate skin injury (reddening and swelling).

**EYE CONTACT:** Liquid and vapors are irritating to eyes. Can cause severe injury.

**INGESTION:** Can cause mental sluggishness.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:**

**ACCUTE:** Can Cause severe eye irritation, redness, tearing, and blurred vision. Excessive inhalation of vapors can cause nausea, respiratory irritation, central nervous system affects, including dizziness, weakness, fatigue, nausea, headache, and possible unconsciousness and even death. Swallowing can cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Aspiration of material into lungs can cause chemical pneumonitis, which is fatal.

**CHRONIC:** Prolonged and repeated skin contact can cause moderate irritation, defatting and dermatitis. Overexposure in laboratory animals has been found the cause of the following affects: Liver abnormalities, kidney damage, lung damage, and spleen damage. Overexposure to this material has been suggested as a cause for liver abnormalities in humans. Prolonged or repeated contact may lead to dermatitis, and with poor hygiene practices, to skin cancer. An Ingredient in this material has been listed as a carcinogen by IARC, NPT, QSHA, and ACGIH.

# ROYSTON<sup>®</sup> DIVISION OF CHASE CORPORATION

## MATERIAL SAFETY DATA SHEET

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### 4. FIRST AID MEASURES

- GENERAL ADVICE: Consult Physician immediately.
- INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Move to an area free from risk of further exposure. Treat symptomatically. Administer oxygen or artificial respiration as needed. **SEEK MEDICAL ATTENTION.**
- SKIN CONTACT: Repeated or prolonged contact can cause drying of skin and dermatitis. Remove contaminated clothing and launder thoroughly before reuse Wash affected skin thoroughly with soap and water. **DO NOT USE SOLVENTS** on skin as they may promote absorption of this material. For severe exposure, get under safety shower after removing clothing, and then **SEEK MEDICAL ATTENTION** if irritation develops or persists after the area has been washed.
- EYE CONTACT: Remove contact lenses. Flush eyes with large amounts of water, preferably lukewarm water, for at least 15 minutes. Refer individual to a physician or ophthalmologist for immediate follow up. **SEEK MEDICAL ATTENTION.**
- INGESTION: **DO NOT INDUCE VOMITING.** Give 1-2 cups of milk or water to drink. **DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION.**
- 

### 5. FIRE FIGHTING MEASURES

- SUITABLE EXTINGUISHING MEDIA: Foam, Carbon Dioxide or dry chemical. Use self-contained breathing apparatus if applicable.
- EXPLOSION DATA:
- SENSITIVITY TO MECHANICAL IMPACT: Stable
- SENSITIVITY TO STATIC DISCHARGE: Expected to be sensitive to static discharge when vapors are present between the lower and upper explosive limits.
- 

### 6. ACCIDENTAL RELEASE MEASURES

- PRECAUTIONS FOR PERSONNEL: Wear protective clothing. Use self-contained breathing apparatus if required.
- ENVIRONMENTAL PRECAUTIONS: Avoid discharge to drains, sewers and natural water supply.
- PROCESS FOR CLEANING: Absorb with inert material. Remove sources of ignition. Scoop material with non-sparking tools.
- 

### 7. HANDLING AND STORAGE

- HANDLING: Ventilate work area sufficiently. Keep containers closed. Avoid contact with eyes, skin and clothing.
- STORAGE: Store between  $-15^{\circ}\text{C}$  and  $+35^{\circ}\text{C}$  for solvent based coatings and thinners. Ground all metal containers. 55-gallon drums may be stored on their sides in a cradle designed for this purpose.
-

# ROYSTON<sup>®</sup> DIVISION OF CHASE CORPORATION

## MATERIAL SAFETY DATA SHEET

### 8. EXPOSURE RESTRICTIONS AND PERSONAL PROTECTION

MATERIALS WITH LIMITS THAT REQUIRE SUPERVISION:

CAS NUMBER	IDENTIFICATION	APP. % BY WGT.	NIOSH REL	VALUE	UNIT
08-88-3	Toluene	30-40	TWA	50	ppm
78-93-3	Methyl Ethyl Ketone	< 5	TWA	200/ 590	ppm(mg/m <sup>3</sup> )
65996-93-2	Coal Tar Pitch	45 -50	TWA	0.2	mg/m <sup>3</sup>
8007-42-2	Coal Tar Pitch	< 5	TWA	0.2	mg/m <sup>3</sup>
25036-25-3	Epoxy Resin	< 5	TWA	5.0	mg/m <sup>3</sup>
12001-26-2	Mica	5-10	TWA	10.0	mg/m <sup>3</sup>
14807-96-6	Talc	< 5	TWA	2.0	mg/m <sup>3</sup>

**ADDITIONAL ADVICE:** Use personal protective equipment, i.e., suitable work clothing, eye goggles and protective gloves. If spraying utilize protective facemask.

### 9. PHYSICAL PROPERTIES

ODOR: AROMATIC

CHANGE OF STATE	VALUE/AREA	UNIT	METHOD
FREEZING POINT:	N/A	°C	
BOILING POINT:	78-110 (174-232)	°C (°F)	
FLASH POINT:	-3.9 (25)	°C (°F)	TCC
IGNITION TEMPERATURE:			
SPECIFIC GRAVITY:	1.107	H <sub>2</sub> O = 1	
% VOLATILE BY VOLUME:	44-55	%	
SOLUBILITY IN WATER:	NEGLIGABLE		
PH VALUE:	N/A		
VISCOSITY:		CPS	
FLAMMABLE LIMITS:	LEL 1.8 UEL 11.5		
EVAPORATION RATE:	3.3	BUAC = 1	

### 10. STABILITY AND REACTIVITY

**STABILITY:** Stable  
**CONDITIONS TO AVOID:** Sparks and Open Flame.  
**MATERIALS TO AVOID:** Contact with strong oxidizing, acidic or alkaline agents.  
**DECOMPOSITION PRODUCTS:** Carbon Monoxide, Carbon Dioxide and Oxides of Nitrogen.  
**EYES:** Splashes or spray vapors may cause irritation.  
**SKIN:** Substance may be an irritant for sensitive skin.  
**INHALATION:** May cause mild nausea/dizziness in some people when used in confined/unventilated areas. Move patient to fresh air. Give nothing by mouth.  
**CONSUMPTION:** If accidentally swallowed may cause discomfort and requires plenty of water or milk to dilute. Do not induce vomiting. Seek medical assistance.

# ROYSTON® DIVISION OF CHASE CORPORATION

## MATERIAL SAFETY DATA SHEET

### 11. TOXICOLOGICAL INFORMATION

CAS NUMBER	IDENTIFICATION	DERMAL LD50	INAHALATION LC50	ORAL LD50
108-88-3	Toluene	12.3 g/kg ( Rabbit)	4959 ppm ( Rat )	7.0 g/kg ( Rat )
78-93-3	Methyl Ethyl Ketone	N/E	23,500 mg/M <sup>3</sup> ( Rat )	2,737 mg/M <sup>3</sup> ( Rat )
65996-93-2	Coal Tar Pitch	N/E	17 mg/M <sup>3</sup> ( Rat )	6,200 mg/kg ( Rat )
8007-42-2	Coal Tar Pitch	N/E	17 mg/M <sup>3</sup> ( Rat )	6,200 mg/kg ( Rat )
25036-25-3	Epoxy Resin	N/E	N/E	N/E
12001-26-2	Mica	N/E	N/E	N/E
14807-96-6	Talc	N/E	N/E	N/E

CAS NUMBER	IDENTIFICATION	CARCINOGENICITY		TERATOGENICITY	MUTAGENICITY
		ACGIH	IARC		
08-88-3	Toluene	N/E	N/E	Yes	N/E
78-93-3	Methyl Ethyl Ketone	N/E	N/E	N/E	N/E
65996-93-2	Coal Tar Pitch	Yes	Yes	N/E	YES
8007-42-2	Coal Tar Pitch	Yes	Yes	N/E	N/E
25036-25-3	Epoxy Resin	N/E	N/E	N/E	N/E
12001-26-2	Mica	N/E	N/E	N/E	N/E
14807-96-6	Talc	N/E	N/E	N/E	N/E

### 12. ECOLOGICAL INFORMATION

VOLATILE ORGANIC COMPOUNDS: 420 Grams Per Liter (g/l). 3.51 Pounds Per Gallon (lb/g).

### 13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be made in accordance with Federal, State and Local regulations.

### 14. TRANSPORT INFORMATION

SHIPPING CLASS: UN1263 PAINT FLAMMABLE LIQUID ; PACKING GROUP II

### 15. REGULATORY INFORMATION

SARA SECTION 302:

SARA (311,312) HAZARD CLASS:

SARA (313) CHEMICALS: TOLUENE, MEK

CERCLA: Toluene: 1000 LBS.; MEK: 5000 LBS.

CPSC CLASSIFICATION:

HMIS: FLAMMABILITY: 3 REACTIVITY: 0 HEALTH: 2

NFPA: FLAMMABILITY: 3 REACTIVITY: 0 HEALTH: 2

#### CALIFORNIA PROPOSITION 65:

- A. This product contains a chemical known to the State of CA to cause birth defects or other reproductive harm.
- B. This product contains a chemical known to the State of CA to cause cancer.
- C. This product contains a chemical known to the State of CA to cause cancer and birth defects or other reproductive harm.

**ROYSTON<sup>®</sup> DIVISION OF CHASE CORPORATION**  
**MATERIAL SAFETY DATA SHEET**

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**16. OTHER INFORMATION**

THIS DATA IS OFFERED IN GOOD FAITH AS TYPICAL VALUES AND ARE NOT A PRODUCT SPECIFICATION. NO WARRANTY, EITHER EXPRESSED OR IMPLIED IS MADE. THE STATED RECOMMENDED HANDLING PROCEDURES ARE BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTEXT OF THE INTENDED USE.

C = Ceiling Limit, NEGL = Negligible, N/A = Not Applicable, N/E = Not Established, PROP. = Proprietary.

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# Material Safety Data Sheet

## 1. Product and Company Identification

**Product Name** Super Iron Out

**Manufacturer** Iron Out dba Summit Brands  
1515 Dividend Road  
Fort Wayne, IN 46808

**Phone** 260-483-2519

**Emergency phone** 1-800-424-9300 (CHEMTREC)

**HMIS**

Health	2
Flammability	0
Reactivity	1

**Revision date** 12/6/07

## 2. Composition/Information on Ingredients

<u>Ingredient</u>	<u>%</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Sodium Hydrosulfite	10-40	7775-14-6	N/A	N/A
Sodium Metabisulfite	10-40	7681-57-4	N/A	5 mg/m3
Sodium Carbonate	1-5	497-19-8	N/A	N/A
Citric Acid	1-5	77-92-9	N/A	N/A

## 3. Hazards Identification

**Emergency overview** May cause eye and skin irritation

**Primary routes of exposure** Eyes, skin, respiratory

**Effects of acute exposure**

<b>Eyes</b>	May cause irritation
<b>Skin</b>	May cause irritation

## 4. First Aid Measures

**Eyes** Flush eyes for at least 15 minutes. Seek medical attention.

**Ingestion** Rinse mouth with water. Drink plenty of water. Induce vomiting. Seek medical attention.

**Inhalation** Remove to fresh air. Possible allergic response to hypersensitive individuals.

**Skin** Flush with water for 15 minutes. Remove contaminated clothing. Seek medical attention.



## 5. Fire Fighting Measures

Flash point	Not applicable
Flammability	Not flammable
Extinguishing media	Water, Carbon dioxide, Foam
Special procedures	None
Unusual hazards	Avoid dusting. Sulfur dioxide gas when decomposing

## 6. Accidental Release Measures

Use good industrial hygiene practices when cleaning up. Contain and neutralize.

## 7. Handling and Storage

Store separately from combustible, organic or other readily oxidizable reactive materials.

## 8. Exposure Controls/Personal Protection

Respiratory protection	None needed
Ventilation	Local ventilation adequate
Protective gloves	Chemically resistant
Eye protection	Safety glasses or face shield
Other protective clothing	Apron or coveralls
Hygienic practices	Maintain ordinary good housekeeping practices

## 9. Physical and Chemical Properties

Physical state	White powder
Odor	Characteristic odor
pH	Not applicable
Boiling point	Not applicable
Specific gravity	0.75
Vapor pressure (mm Hg)	Not applicable
Melting point	Not applicable
Vapor density (Air=1)	Not applicable
Solubility in water	Soluble
Evaporation rate	Not applicable



## 10. Chemical Stability and Reactivity Information

<b>Chemical stability</b>	Stable under recommended storage conditions
<b>Conditions to avoid</b>	Do not mix with bleach or any other chemical
<b>Hazardous decomposition</b>	May include and not limited to oxides of carbon, oxides of sulfur, and hydrogen sulfide when heated to decomposition.
<b>Products</b>	
<b>Hazardous polymerization</b>	Will not occur

## 11. Toxicological Information

<b>Primary routes of exposure</b>	Eyes, skin, respiratory
<b>Effects of acute exposure</b>	
<b>Eyes</b>	May cause irritation
<b>Skin</b>	May cause irritation or dermatitis
<b>Ingestion</b>	Mild irritation
<b>Medical conditions aggravated by exposure</b>	Lung disease, asthma

## 12. Ecological Information

No ecological information is available.

## 13. Disposal Considerations

Dispose of according to local, state and federal regulations.

## 14. Transportation Information

Non DOT-Regulated.

## 15. Regulatory Information

Follow all applicable local, State and Federal regulations.

## 16. Other Information

**Prepared by:** SES, 3807 Transportation Drive, Fort Wayne, IN 46818 1-800-654-4915

**Disclaimer** Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond the control of the supplier, it is assumed that users of this product have been trained according to the requirements of all applicable regulations. No warranty, expressed or implied, is made and the supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.



# MATERIAL SAFETY DATA SHEET

RAMCO INSULATION, INC  
2021 ROOSEVELT, JOPLIN, MISSOURI 64804  
TELEPHONE: 417-781-8855 FAX 417-781-9192

## SECTION I

**PRODUCT NAME:** SUPER STIK/QUIK COTE/SUPERTEMP 1900/RAMCOTE 1200

**FORMULA:** NOT APPLICABLE

**PRODUCT TYPE:** CEMENTITIOUS INSULATION

**NFPA RATING:** 1-0-0-0

**CHEMICAL FAMILY:** NOT APPLICABLE

**DOT NO:** NOT REGULATED

## SECTION II

### PRODUCT HAZARDOUS INGREDIENTS

<u>MATERIAL</u>	<u>TLV-TWA</u>	<u>CAS#</u>	<u>PERCENT</u>
Mineral Wool Fiber	10 mg. M total 5 mg. M respirable	65997-17-3	25-35
Bentonite Colloidal Clay	10 mg. M total 5 mg. M respirable	1302-78-9	15-25
Portland Cement	10 mg. M total 5 mg. M respirable	65997-15-1	25-35
Calcium Carbonate	10 mg. M total 5 mg. M respirable	1317-65-3	20-30
Fly Ash	10 mg. M total 5 mg. M respirable	14808-60-7	5-15
Cellulose	Not listed	65996-61-4	5-10
Rust Inhibitor (Trade Secret)	10 mg. M total 5 mg. M respirable	-----	<5

**Note:** International Agency for Research on Cancer (IARC) has classified crystalline silica in the category of Group 1  
**(DOES NOT CONTAIN ASBESTOS)**

## SECTION III

### HAZARDS INFORMATION

This product contains crystalline silica. Prolonged exposure to dust may cause silicosis, a progressive pneumoconiosis, or other respiratory diseases. International Agency for Research on Cancer (IARC) has classified crystalline silica as Group 1. The agency states there is sufficient evidence of carcinogenicity in humans. Reference: IARC Monograph 68.

Dust from product at any stage of its use or during tear-out after service may, especially on long term exposure, lead to lung disease unless respiratory protection is employed. NIOSH approved respirators should be worn any time that refractories are torn out after service. While a respiratory hazard and/or nuisance dust may exist from the product itself, other foreign substances may warrant additional precautions during tear-out and disposal.

## SECTION IV

### FIRE AND EXPLOSION HAZARD DATA

**FLASH POINT:** Non-Combustible

**EXTINGUISHING MEDIA:** Material compatible with CO water or dry chemical extinguishing media.

**SPECIAL FIRE FIGHTING PROCEDURES:** None

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None

SECTION V  
FIRST AID AND HEALTH HAZARD DATA

EFFECT OF OVEREXPOSURE:

EYES: ACUTE: May cause irritation.  
CHRONIC: None known.

SKIN: ACUTE: May cause skin irritation.  
CHRONIC: None known.

INHALATION: ACUTE: May cause upper respiratory irritation.  
CHRONIC: Prolonged irritation of mineral wool dust may reduce lung

function.

EFFECTS OF OVEREXPOSURE:

INGESTION: ACUTE: CONSULT A PHYSICIAN IMMEDIATELY.

EMERGENCY AND FIRST AID PROCEDURES:

EYES: Immediately rinse eyes with plenty of water until irritation stops.

SKIN: Wash frequently with soap and water to minimize irritation.

INHALATION: Remove to fresh air. Remove fibers and dust from nose and drink water to clear throat.

INGESTION: Consult a physician immediately.

NOTE: Should any of the above conditions persist, consult a physician.

---

SECTION VI  
ACCIDENTAL RELEASE MEASURES

SPILLS: Avoid creating dust, use a vacuum or wet clean-up to minimize dust.

WASTE DISPOSAL: Mineral wool fiber products are generally classified as a non-hazardous waste and may be disposed of in a non-critical landfill. Always check all local, state and federal regulations.

---

SECTION VII  
HANDLING AND STORAGE

Store in dry area. Product is non-flammable.

---

SECTION VIII  
EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Wear NIOSH/MSHA approved respirators.

VENTILATION: Use sufficient ventilation (natural or mechanical) while handling this material in a dry state, to maintain airborne dust levels below TLV.

EYE PROTECTION: Safety glasses or goggles should be worn when materials are being handled.

GENERAL INFORMATION: Use waterproof or rubber gloves to protect hands. Clothing should be long sleeved, loose fitting and a cap should be worn. Wash all work clothing separate from other clothing to prevent possible migration of mineral wool fiber and dust to other clothes.

---

SECTION IX  
CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE AND ODOR: Dry, granular mixture, gray in color.

BOILING POINT: N/A

MELTING POINT: N/A

SOLUBILITY IN WATER: N/A

pH: 9.5 to 10.5

SECTION X  
STABILITY AND REACTIVITY

This product is stable under normal conditions of use, storage and transportation.

This product can react with strong acids.

SECTION XI  
TOXICOLOGICAL INFORMATION

LD or LC for oral, dermal or inhalation routes of administration. No data for product.

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SECTION XII  
ECOLOGICAL INFORMATION

Ecotoxicological chemical fate information: Not available.

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SECTION XIII  
DISPOSAL CONSIDERATIONS

As supplied, product may be disposed of in an approved landfill, in accordance with federal, state and local regulations.

Supplier can make no statement concerning disposal of used product, since product may become contaminated by hazardous materials during use.

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SECTION XIV  
TRANSPORTATION INFORMATION

U.S.A. DOT: Not regulated.  
Canadian TDG Hazard Class & PIN: Not regulated.

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SECTION XV  
REGULATORY INFORMATION

TSCA Status: All components listed.

Canadian DSL: All components listed.

SARA Title III, Section 313: This MSDS provides the toxic chemical "SUPPLIER INFORMATION" required under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372. Toxic chemical information, if applicable to the product(s) named, is located in Section II - HAZARDOUS INGREDIENTS section of the MSDS. This information is subject to the toxic chemical reporting requirements of Section 313 and must be included in all MSDSs that are copied and distributed for this product.

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SECTION XVI  
OTHER INFORMATION

MSDS Status: Replaces MSDS dated 03/01/2004

Note: This material safety data sheet contains confidential proprietary information and is not to be disclosed to the general public or to competition except as required by law. This information accumulated herein is believed to be accurate but is not warranted to be whether originating with Ramco Insulation, Inc. or not. This information is offered solely for use in your evaluation of this product in respect to safety, health and environmental hazards.

MANUFACTURED BY:

**RAMCO INSULATION, INC.**

P.O. Box 2173, JOPLIN, MO. 64803

Office: 417-781-8855 FAX: 417-781-9192

CURRENT MSDS DATE: 7/22/06

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# Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

## U.S. Department of Labor

Occupational Safety and Health Administration  
(Non-Mandatory Form)

Form Approved  
OMB No. 1218-0072



IDENTITY (As Used on Label and List)  
**THRIFT DRAIN CLEANER**

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

### Section I

Emergency Telephone Number 1-800-255-3924	
Address (Number, Street, City, State, and ZIP Code) 204 South Jackson	Telephone Number for Information 409-327-5723
Livingston, Texas 77351	Date Prepared 7-10-01
Signature of Preparer (optional) <i>A. Ray Ferguson</i>	

### Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Caustic Soda—Sodium Hydroxide CAS 1310-73-2	2	2	None	99

### Section III — Physical/Chemical Characteristics

Boiling Point F-2530	Specific Gravity (H <sub>2</sub> O = 1)	2.13
Vapor Pressure (mm Hg.) 20	Melting Point	F-590
Vapor Density (AIR = 1) Air-1	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water 100		

Appearance and Odor

**White-Solid-No Odor**

### Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used) Deg. F None (None)	Flammable Limits None	LEL N/A	UEL N/A
Extinguishing Media	This material is not combustible. Contact with water may generate enough heat to ignite combustible materials.		
Special Fire Fighting Procedures None			

Unusual Fire and Explosion Hazards This material melts at 590 deg. F. Hot molten material will react violently with water. It will react with metals such as Aluminum, Tin, and Zinc to produce flammable Hydrogen Gas.

**Section V -- Reactivity Data**

Stability	Unstable	Conditions to Avoid
	Stable	Keep water and moist air out of the container.

Incompatibility (Materials to Avoid) Acids, Combustible Materials, Aluminum, Tin and Zinc.

Hazardous Decomposition or Byproducts

None

Hazardous Polymerization	May Occur	Conditions to Avoid
	Will Not Occur	X

**Section VI -- Health Hazard Data**

Route(s) of Entry	Inhalation?	Skin?	Ingestion?
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Health Hazards (Acute and Chronic) Corrosive to the entire Respiratory Tract. Brief contact to the eyes may cause severe damage. Causes rapid burning and severe pain to the mouth, throat, and digestive tract when swallowed, some effects may be delayed.

Carcinogenicity	NTP?	IARC Monographs?	OSHA Regulated?
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This material is not considered to be a carcinogen by any of the above.

Signs and Symptoms of Exposure Burning of skin, eyes, mouth and etc.

Medical Conditions Generally Aggravated by Exposure None known

Emergency and First Aid Procedures External-Flood with water for 15 minutes. Eyes-flush with water for 15 minutes. Internal-drink large quantities of water-- Call physician in all cases

**Section VII -- Precautions for Safe Handling and Use**

Steps to Be Taken in Case Material Is Released or Spilled Wear rubber boots, rubber gloves, and eye goggles. Sweep up and dispose in sewage drain-follow with lots of water.

Waste Disposal Method In sewage drain follow with lots of water.

Precautions to Be Taken in Handling and Storing Store in dry place with lid on tightly. Keep out of the reach of children.

Other Precautions None

**Section VIII -- Control Measures**

Respiratory Protection (Specify Type)		
ventilation	Local Exhaust X Mechanical (General)	Special Other
	Protective Gloves Rubber	Eye Protection Goggles
Other Protective Clothing or Equipment None		
Work/Hygenic Practices Keep container tightly closed when not in use		

# MATERIAL SAFETY DATA SHEET

## SECTION I - PRODUCT INFORMATION

This MSDS covers

Products: **Touch 'n Seal® Gun Foam II**

### Manufacturer:

Convenience Products  
866 Horan Drive  
Fenton, MO. 63026-2416 USA

Emergency Number: 1-800-424-9300 (Chemtrec)

(636) 349-5333 (Convenience Products)

Prepared by Jay Zhang

Approved by Dr. Joe Lott **09/01/2005**

## SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>CHEMICAL NAME</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>PERCENTAGE</u>
Methylene bisphenyl isocyanate**	101-68-8	0.02 ppm	0.005 ppm	7-20
Polymethylene Polyphenyl Isocyanate	9016-87-9	*NE	*NE	20-55
Polyether Polyol	Mixture	*NE	*NE	10-40
Dimethylether	115-10-6	*NE	*NE	0-8
Propane	74-98-6	1000 ppm	1000 ppm	2-10
Isobutane	75-28-5	*NE	*NE	2-10

\*Not established

\*\* None of the components in this product are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

<b>HMIS</b>	Health 3	Flammability 4	Reactivity 1
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## SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	-43.7°F (-42°C) (Estimated for Propellant)
Vapor Pressure	165 psig at 130°
Vapor Density	(AIR = 1) Heavier than Air
Specific Gravity	(H <sub>2</sub> O = 1) 1.01 g/ml at 25°C
Solubility in Water	N/A
Appearance and Odor	Gel under pressure/faint hydrocarbon odor



#### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point	Estimated: -156°F (-104°C)
Flammable Limits in air % by Volume	UEL Upper 10% (Estimated) LEL Lower 1.8% (Estimated)
Extinguishing Media	Water fog, foam, CO <sub>2</sub> , or dry chemical
Fire Fighting Procedures	Fire fighters should wear full self-contained breathing apparatus and full protective clothing.
Unusual Hazards	Avoid storage temperatures above 120°F to prevent can explosions. Avoid water contamination in closed container.

#### SECTION V - REACTIVITY DATA

Stability	Stable under normal storage and handling conditions. Do not store above 120°F. Cured foam will deteriorate when exposed to UV light.
Incompatibility	Water, alcohols, strong bases, finely powdered metal such as aluminum, magnesium or zinc, and strong oxidizers.
Conditions/Hazards to Avoid	Contamination with water may form CO <sub>2</sub> . Avoid high heat; i.e., flames, extremely hot metal surfaces, heating elements, combustion engines, etc. Do not store in auto or direct sunlight.

#### SECTION VI - HEALTH HAZARD DATA

The primary adverse health effects of this material are related to the Polymeric Isocyanate (MDI) component, and, to a lesser degree, the Liquefied Petroleum Gas (Hydrocarbon) component. Adequate ventilation should be provided to avoid exceeding the exposure limits of these components. If used indoors, mechanical ventilation or exhaust should be provided during use and until foam is cured and vapor of the Liquefied Petroleum Gas (Hydrocarbon) is vented out of the build.

Inhalation MDI vapors may cause irritation of the mucous membranes of the nose, throat or trachea, which may cause chest discomfort, coughing, and allergic asthma-like sensitivity. Air-borne overexposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema.

Inhaling concentrated the Liquefied Petroleum Gas (Hydrocarbon) can cause lightheadedness, headaches, or lethargy. Person with cardiac arrhythmia may be at increased risk in server exposure.

Skin Contact: may result in localized irritation, reddening or swelling. Prolonged or repeated exposure may lead to sensitization and/or dermatitis.

Eyes Contact: may result in eye irritation and mild corneal opacity due to adhesive character.

Ingestion: may cause irritation of mucous membranes in the mouth and digestive tract.

#### Emergency and First Aid Procedures

Inhalation - Remove to fresh air. Get immediate medical attention.

Skin - Immediately clean wet foam from skin, using Touch n' Foam Cleaner or acetone - do not use water. If foam dries on skin, apply generous amounts of petroleum jelly or lanolin, put on plastic gloves and wait 1 hour. With a clean cloth, firmly wipe off petroleum jelly and repeat process. Do not attempt to remove dried foam with solvent. Cured foam wears off and is not harmful to health.

Eye - In case of eye contact, flush with water for 15 minutes. Get immediate medical attention.

Ingestion - In case of ingestion, get immediate medical attention.



## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Spills/Leaks	If can ruptures, protect area from heat, sparks, flames, or static electricity. Turn off sources of ignition. Vapors are heavier than air. Make sure area is adequately ventilated. Allow foaming process to complete; then dispose according to federal, state, and local regulation.
Waste Disposal	Dispose of cured foam per federal, state, and local regulations.
Container Disposal	Dispose according to federal, state, and local regulations.
Storage	Always store upright. Storage temperatures: min. 0°F, max. 100°F. Do not store containers in direct sunlight.

## SECTION VIII - PERSONAL PROTECTION

Respiratory Protection	Not applicable
Clothing	Wear gloves and safety glasses. Use in well ventilated areas only. See section IV.
Eye Protection	Safety glasses.
Ventilation	Maintain local exhaust rate to keep below TLV.

## SECTION IX - REGULATORY INFORMATION

**TSCA** – Inventory Status: all chemicals contained in this product are listed on TSCA inventory.

**SARA** - This product contains a toxic chemical (or chemicals) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR 372).

NAME	CAS NO.	AMOUNT
Methylene bisphenyl isocyanate	101-68-8	7-20%

**CERCLA** - Reportable Quantity - yes ... (40CFR 302.4).....(5000 lb. of Methylene bisphenyl isocyanate)

**RCRA** Hazardous Waste - No

**DOT** Proper Shipping Name - Consumer Commodity

**Diphenylmethane Diisocyanate (cas# 101-68-8) is cited on certain state lists as follow:**

NJ2=New Jersey environmental hazardous substance (present at greater than or equal to 1.0%)

NJ3=New Jersey workplace hazardous substance (present at greater than or equal to 1.0%)

PA1=Pennsylvania hazardous substance (present at greater than or equal to 1.0%)

PA3=New Jersey environmental hazardous substance (present at greater than or equal to 1.0%)

## CANADIAN REGULATIONS

**WHMIS** - The Canadian workplace Hazardous Material Information System Classification: This product is not a "controlled Product" under WHMIS.

**CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):**

All substances in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to list.

*The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, Convenience Products makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.*



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# MATERIAL SAFETY DATA SHEET

## SECTION 1

## PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT

**Product Name:** GASOLINE, UNLEADED AUTOMOTIVE

**Product Description:** Hydrocarbons and Additives

**Product Code:** 123455-20, 9700, 977032, 977217, 977306, 977360, 977371, 977381, 977445, 977562, 977767, 977920, 979533, 97A039, 97A065, 97A078, 97A087, 97A102, 97A108, 97A146, 97A147, 97A152, 97A193, 97A200, 97A240, 97A266, 97A273, 97A290, 97A305, 97A316, 97A317, 97A328, 97A347, 97A380, 97A404, 97A424, 97A431, 97A441, 97A514, 97A556, 97A557, 97A613, 97A634, 97A653, 97A655, 97A659, 97A686, 97A696, 97A703, 97A712, 97A726, 97A736, 97A746, 97A767, 97A794, 97A798, 97A827, 97A848, 97A851, 97A876, 97A883, 97A907, 97A934, 97A948, 97A949, 97A960, 97A983, 97A989, 97AV99, 97AW00, 97AW01, 97AW38, 97AZ87, 97AZ88, 97AZ89, 97AZ90, 97AZ91, 97AZ92, 97AZ93, 97AZ94, 97AZ95, 97AZ96, 97AZ97, 97AZ98, 97AZ99, 97BA11, 97BA12, 97BA13, 97BA14, 97BA15, 97BA16, 97BA67, 97BA68, 97BA69, 97BA70, 97BE24, 97BE25, 97BE26, 97BE27, 97BE28, 97BE29, 97BE30, 97BE31, 97BE32, 97BE33, 97BE34, 97BE35, 97BE36, 97BE37, 97BE38, 97BE39, 97BN13, 97BN50, 97BP69, 97BP70, 97BP71, 97C070, 97C072, 97C075, 97C110, 97C112, 97C113, 97C118, 97C127, 97C140, 97C148, 97C166, 97C417, 97C558, 97C576, 97C632, 97C702, 97C731, 97C759, 97C770, 97C782, 97C794, 97C870, 97C917, 97D130, 97D228, 97E002, 97E010, 97E041, 97E065, 97E087, 97E103, 97E104, 97E11, 97E112, 97E113, 97E170, 97E171, 97E196, 97E197, 97E259, 97E260, 97E304, 97E305, 97E347, 97E42, 97E532, 97E564, 97E581, 97E595, 97E606, 97E611, 97E619, 97E649, 97E655, 97E66, 97E682, 97E749, 97E860, 97E88, 97E999, 97F005, 97F020, 97F030, 97F054, 97F312, 97F344, 97F952, 97M190, 97M191, 97M192, 97M193, 97M194, 97M195, 97M229, 97M230, 97M232, 97N832, 97N844, 97N848, 97N861, 97N873, 97N877, 97N879, 97N891, 97N895, 97N913, 97N917, 97N921, 97N941, 97N942, 97N954, 97Q303, 97Q763, 97Q781, 97Q782, 97R368, 97S760, 97U927, 97V321, 97V323, 97V325, 97V326, 97X113, 97X114, 97X861, EMGF20

**Intended Use:** Fuel, Gasoline

### COMPANY IDENTIFICATION

**Supplier:**

**EXXON MOBIL CORPORATION**

3225 GALLOWES RD.

FAIRFAX, VA. 22037 USA

**24 Hour Health Emergency**

609-737-4411

**Transportation Emergency Phone**

800-424-9300

**ExxonMobil Transportation No.**

281-834-3296

**Product Technical Information**

800-662-4525, 800-947-9147

**MSDS Internet Address**

<http://www.exxon.com>, <http://www.mobil.com>

## SECTION 2

## COMPOSITION / INFORMATION ON INGREDIENTS

### Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
ETHYL ALCOHOL	64-17-5	< 11%
Gasoline	86290-81-5	89 - 100%

### Hazardous Constituent(s) Contained in Complex Substance(s)

Name	CAS#	Concentration*
BENZENE	71-43-2	0.1 - 5%

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ETHYL BENZENE	100-41-4	1 - 5%
N-HEXANE	110-54-3	1 - 5%
NAPHTHALENE	91-20-3	<1%
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%
Toluene	108-88-3	5 - 10%
TRIMETHYL BENZENE	25551-13-7	1 - 5%
XYLENES	1330-20-7	5 - 10%

\* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: The concentration of the components shown above may vary substantially. In certain countries, benzene content may be limited to lower levels. Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl ether, and ethyl-tertiary-butyl ether may be present. Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline. The major components of gasoline vapor are: butane, isobutane, pentane, and isopentane. The reportable component percentages, shown in the composition/information on ingredients section, are based on API's evaluation of a typical gasoline mixture.

### SECTION 3 HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

#### POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Extremely flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

#### POTENTIAL HEALTH EFFECTS

Irritating to skin. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).

**Target Organs:** Lung | Skin |

#### ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**NFPA Hazard ID:** Health: 1 Flammability: 3 Reactivity: 0  
**HMS Hazard ID:** Health: 1\* Flammability: 3 Reactivity: 0

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

### SECTION 4 FIRST AID MEASURES

#### Inhalation

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.



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### SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

### EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

### Ingestion

Seek immediate medical attention. Do not induce vomiting.

### NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

### PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Benzene- Individuals with liver disease may be more susceptible to toxic effects.

<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
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### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Unusual Fire Hazards:** Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

**Hazardous Combustion Products:** Smoke, Fume, Aldehydes, Sulfur Oxides, Incomplete combustion products, Oxides of carbon

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** <-40C (-40F) [ ASTM D-56]

**Flammable Limits (Approximate volume % in air):** LEL: 1.4 UEL: 7.6

**Autoignition Temperature:** >250°C (482°F)

<b>SECTION 6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable

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regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

## PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

## SPILL MANAGEMENT

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces. Recover by pumping or with suitable absorbent.

**Water Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

<b>SECTION 7</b>
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<b>HANDLING AND STORAGE</b>
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## HANDLING

Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

**Static Accumulator:** This material is a static accumulator.

## STORAGE

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Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard			NOTE	Source
BENZENE		OSHA Action level	0.5 ppm		N/A	OSHA Sp.Reg.
BENZENE		STEL	5 ppm		N/A	OSHA Sp.Reg.
BENZENE		TWA	1 ppm		N/A	OSHA Sp.Reg.
BENZENE		STEL	2.5 ppm		Skin	ACGIH
BENZENE		TWA	0.5 ppm		Skin	ACGIH
ETHYL ALCOHOL		TWA	1900 mg/m <sup>3</sup>	1000 ppm	N/A	OSHA Z1
ETHYL ALCOHOL		STEL	1000 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	435 mg/m <sup>3</sup>	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		STEL	125 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	100 ppm		N/A	ACGIH
Gasoline		STEL	200 ppm		N/A	ExxonMobil
Gasoline		TWA	100 ppm		N/A	ExxonMobil
Gasoline		STEL	500 ppm		N/A	ACGIH
Gasoline		TWA	300 ppm		N/A	ACGIH
N-HEXANE		TWA	1800 mg/m <sup>3</sup>	500 ppm	N/A	OSHA Z1
N-HEXANE		TWA	50 ppm		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m <sup>3</sup>	10 ppm	N/A	OSHA Z1
NAPHTHALENE		STEL	15 ppm		Skin	ACGIH
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)		TWA	25 ppm		N/A	ACGIH
Toluene		Ceiling	300 ppm		N/A	OSHA Z2
Toluene		Maximum concentration	500 ppm		N/A	OSHA Z2
Toluene		TWA	200 ppm		N/A	OSHA Z2
Toluene		TWA	20 ppm		N/A	ACGIH
TRIMETHYL BENZENE		TWA	25 ppm		N/A	ACGIH
XYLENES		TWA	435 mg/m <sup>3</sup>	100 ppm	N/A	OSHA Z1
XYLENES		STEL	150 ppm		N/A	ACGIH
XYLENES		TWA	100 ppm		N/A	ACGIH

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NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

## ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

## PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

<b>SECTION 9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
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Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

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## GENERAL INFORMATION

**Physical State:** Liquid  
**Color:** Clear (May Be Dyed)  
**Odor:** Petroleum/Solvent  
**Odor Threshold:** N/D

## IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 C):** 0.74  
**Flash Point [Method]:** <-40C (-40F) [ ASTM D-56]  
**Flammable Limits (Approximate volume % in air):** LEL: 1.4 UEL: 7.6  
**Autoignition Temperature:** >250°C (482°F)  
**Boiling Point / Range:** > 20C (68F)  
**Vapor Density (Air = 1):** 3 at 101 kPa  
**Vapor Pressure:** > 26.6 kPa (200 mm Hg) at 20 C  
**Evaporation Rate (N-Butyl Acetate = 1):** > 10  
**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3  
**Solubility in Water:** Negligible  
**Viscosity:** <1 cSt (1 mm<sup>2</sup>/sec) at 40 C  
**Oxidizing Properties:** See Sections 3, 15, 16.

## OTHER INFORMATION

**Freezing Point:** N/D  
**Melting Point:** N/A

### SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** Avoid heat, sparks, open flames and other ignition sources.

**MATERIALS TO AVOID:** Halogens, Strong Acids, Alkalies, Strong oxidizers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**HAZARDOUS POLYMERIZATION:** Will not occur.

### SECTION 11 TOXICOLOGICAL INFORMATION

#### ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
<b>Inhalation</b>	
Toxicity (Rat): LC50 > 5000 mg/m <sup>3</sup>	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
<b>Ingestion</b>	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
<b>Skin</b>	

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Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Moderately irritating to skin with prolonged exposure. Based on test data for structurally similar materials.
<b>Eye</b>	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

## CHRONIC/OTHER EFFECTS

### For the product itself:

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk.

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

### Contains:

**BENZENE:** Caused cancer (leukemia), damage to the blood-producing system, and serious blood disorders from prolonged, high exposure based on human epidemiology studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus in laboratory animal studies.

**ETHANOL:** Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring.

**NAPHTHALENE:** Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

**N-HEXANE:** Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

**TOLUENE :** Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

**TRIMETHYLBENZENE:** Long-term inhalation exposure of trimethylbenzene caused effects to the blood in laboratory animals.

**ETHYLBENZENE:** Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

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The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 3, 6
ETHYL BENZENE	100-41-4	5
Gasoline	86290-81-5	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC

2 = NTP SUS

3 = IARC 1

4 = IARC 2A

5 = IARC 2B

6 = OSHA CARC

## SECTION 12

## ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

### ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

### MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

### PERSISTENCE AND DEGRADABILITY

#### Biodegradation:

Majority of components -- Expected to be inherently biodegradable

#### Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

### BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

## SECTION 13

## DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

### DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.



Product Name: GASOLINE, UNLEADED AUTOMOTIVE

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## REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY. TCLP (BENZENE)

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

## SECTION 14

## TRANSPORT INFORMATION

### LAND (DOT)

**Proper Shipping Name:** Gasoline

**Hazard Class & Division:** 3

**ID Number:** 1203

**Packing Group:** II

**Marine Pollutant:** Yes

**ERG Number:** 128

**Label(s):** 3

**Transport Document Name:** UN1203, GASOLINE, 3, PG II, MARINE POLLUTANT

### LAND (TDG)

**Proper Shipping Name:** Gasoline

**Hazard Class & Division:** 3

**UN Number:** 1203

**Packing Group:** II

**Special Provisions:** 17

### SEA (IMDG)

**Proper Shipping Name:** MOTOR SPIRIT or GASOLINE or PETROL

**Hazard Class & Division:** 3

**EMS Number:** F-E, S-E

**UN Number:** 1203

**Packing Group:** II

**Marine Pollutant:** Yes

**Label(s):** 3

**Transport Document Name:** UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-40°C c.c.), MARINE POLLUTANT

### AIR (IATA)

**Proper Shipping Name:** Gasoline

**Hazard Class & Division:** 3

**UN Number:** 1203

**Packing Group:** II

**Label(s) / Mark(s):** 3

**Transport Document Name:** UN1203, GASOLINE, 3, PG II



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<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**OSHA HAZARD COMMUNICATION STANDARD:** When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

**NATIONAL CHEMICAL INVENTORY LISTING:** AICS, DSL, EINECS, ENCS, KECI, PICCS, TSCA

**EPCRA:** This material contains no extremely hazardous substances.

**CERCLA:** This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** Fire. Immediate Health. Delayed Health.

**SARA (313) TOXIC RELEASE INVENTORY:**

Chemical Name	CAS Number	Typical Value
BENZENE	71-43-2	0.1 - 5%
ETHYL BENZENE	100-41-4	1 - 5%
N-HEXANE	110-54-3	1 - 5%
NAPHTHALENE	91-20-3	<1%
Toluene	108-88-3	5 - 10%
XYLENES	1330-20-7	5 - 10%
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19
ETHYL ALCOHOL	64-17-5	1, 4, 13, 17, 18, 19
ETHYL BENZENE	100-41-4	1, 4, 10, 13, 16, 17, 18, 19
Gasoline	86290-81-5	1, 17, 18
N-HEXANE	110-54-3	1, 4, 13, 16, 17, 18, 19
NAPHTHALENE	91-20-3	1, 4, 5, 9, 10
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1, 13, 16, 17, 18, 19
Toluene	108-88-3	1, 4, 11, 13, 15, 16, 17, 18, 19
TRIMETHYL BENZENE	25551-13-7	1, 13, 16, 17, 18, 19
XYLENES	1330-20-7	1, 4, 5, 9, 13, 15, 17, 18, 19

--REGULATORY LISTS SEARCHED--

- |               |              |                   |             |
|---------------|--------------|-------------------|-------------|
| 1 = ACGIH ALL | 6 = TSCA 5a2 | 11 = CA P65 REPRO | 16 = MN RTK |
| 2 = ACGIH A1  | 7 = TSCA 5e  | 12 = CA RTK       | 17 = NJ RTK |
| 3 = ACGIH A2  | 8 = TSCA 6   | 13 = IL RTK       | 18 = PA RTK |
| 4 = OSHA Z    | 9 = TSCA 12b | 14 = LA RTK       | 19 = RI RTK |

Product Name: GASOLINE, UNLEADED AUTOMOTIVE

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5 = TSCA 4

10 = CA P65 CARC

15 = MI 293

Code key: CARC=Carcinogen; REPRO=Reproductive

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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N/D = Not determined, N/A = Not applicable

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Revision Changes:

Section 06: Notification Procedures - Header was modified.

Section 01: Product Code was modified.

Section 08: Personal Protection - Header was modified.

Section 14: Marine Pollutant was modified.

Section 15: SARA (313) TOXIC RELEASE INVENTORY - Table was modified.

Section 16: Precautions - Header was modified.

**THIS MSDS COVERS THE FOLLOWING MATERIALS:** ESSO EXTRA MIDGRADE UNLEADED | ESSO MIDGRADE UNLEADED | ESSO PREMIUM UNLEADED | ESSO REGULAR UNLEADED | ESSO SUPER PREMIUM UNLEADED | EXXON MIDGRADE UNLEADED | EXXON PREMIUM UNLEADED | EXXON REGULAR UNLEADED | Gasoline | INDOLINE GASOLINE | MIDGRADE UNLEADED | MOBIL EXTRA UNLEADED | MOBIL REGULAR UNLEADED | MOBIL SPECIAL UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED GASOLINE

-----  
**PRECAUTIONARY LABEL TEXT:**

**Contains:** BENZENE, Gasoline

DANGER!

**HEALTH HAZARDS**

Irritating to skin. If swallowed, may be aspirated and cause lung damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).

**Target Organs:** Lung | Skin |

**PHYSICAL HAZARDS**

Extremely flammable. Material can accumulate static charges which may cause an incendiary electrical discharge. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

**PRECAUTIONS**

Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures.

**FIRST AID**

**Inhalation:** Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**Eye:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Oral:** Seek immediate medical attention. Do not induce vomiting.

Product Name: GASOLINE, UNLEADED AUTOMOTIVE

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**Skin:** Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**FIRE FIGHTING MEDIA**

Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**SPILL/LEAK**

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Recover by pumping or with suitable absorbent.

**Water Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

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Internal Use Only

MHC: 1A, 0, 0, 0, 3, 1

PPEC: CF

DGN: 2000316XUS (1011203)

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**Material Safety Data Sheet**

May be used to comply with  
SHA's Hazard Communication Standard,  
29 CFR 1910.1200. Standard must be  
consulted for specific requirements.

**U. S. Department of Labor**  
Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072

<b>Identity</b> (As used on Label and List) <div style="text-align: center; border: 1px solid black; border-radius: 50%; width: 100px; margin: 0 auto; padding: 5px;">UNLIME®</div>	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to so indicate.
--	---

**Section I**

Manufacturer's Name Dist. by A. O. Smith Water Products Co.	Emergency Telephone Number (847) 564-2320
Address (Number, Street, City, State, and ZIP Code) 5621 W. 115th Street Alsip, IL 60803-5163	Telephone Number for Information (847) 564-2320
	Date Prepared 12/1/1998
	Signature of Preparer (optional)

**Section II - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Phosphoric Acid	CAS #7664-38-2	1 Mg/M <sup>3</sup>	1 Mg/M <sup>3</sup>	

**Section III - Physical/Chemical Characteristics**

Boiling Point 101° C	Specific Gravity (H <sub>2</sub> O = 1) 1.12 - 1.25
Vapor Pressure (mm Hg.) Non-Volatile	Melting Point/Freezing Point - 4.0° C. to - 19.0° C.
Vapor Density (Air = 1) Non-Volatile	Evaporation Rate Butyl Acetate = 1 Non-Volatile
Solubility in Water 100%	
Appearance and Odor Red Colored, Odorless Solution	

**Section IV - Fire and Explosion Hazard Data**

Flash Point (Method Used) Non - Combustible	Flammable Limits Not Applicable	LEL	UEL
Extinguishing Media Not Applicable			
Special Fire Fighting Procedures Use full protective clothing and self contained breathing apparatus.			

**Unusual Fire and Explosion Hazards**

Under fire conditions, may decompose to emit irritating phosphorous oxide fumes.

Contact with common metals produces hydrogen which may form flammable mixtures with air.

**Section V - Reactivity Data**

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid) Contact with reactive metals (Ex. Mild Steel, Magnesium, Aluminum, Zinc, Etc.) Produces Hydrogen Which May Form Flammable Mixtures With Air. Highly Reactive With Strong Bases. At Flame Temperatures, Will Emit Phosphorous Oxide Fumes.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

**Section VI - Health Hazard Data**

Route(s) of Entry                      Inhalation? **Irritant**                                      Skin? **Irritant**                                      Ingestion? **Slightly Hazardous**

Health Hazards (Acute and Chronic) Phosphoric Acid is the least corrosive of the common mineral acids. It is completely and rapidly soluble in water. If exposed areas are flushed properly and thoroughly with water there should be no harm. Longer term exposure may lead to rash or burns.

Carcinogenity                                      NTP **NO**                                      IARC Monographs **NO**                                      OSHA Regulated **NO**

FDA GRAS List, Permitted in Food 116.4

Signs and Symptoms of Exposure **Respiratory, Skin and/or Eye Irritant**

Medical Conditions

Generally Aggravated by Exposure **None Known**

Emergency and First Aid Procedures (1) Eyes: Flush with copious water for at least 15 minutes. If irritation persists Get Medical Attention. (2) Skin: Wash off with water. If irritation persists, Get Medical Attention. (3) Inhalation: Remove from exposure. If breathing is difficult or discomfort persists, Get Medical Attention. (4) Ingestion: Rinse mouth with water, give copious water to cause dilution in stomach. Do not cause vomiting. Get Medical Attention.

**Section VII - Precautions for Safe Handling and Use**

Steps to Be Taken in Case Material is Released or Spilled **Neutralize spill area with soda ash & then flush with copious amounts of water. Adequate ventilation required if vapor or mist conditions exist.**

Waste Disposal Method **According to Local, State & Federal Regulations.**

Precautions to Be Taken in Handling and Storing **Store in cool, dry, well ventilated location. Store in suitable containers (ex.) glass, fiberglass, reinforced plastic, poly. lined drums, type 316 stainless steel etc.)**

Other Precautions **Do not store in reactive metal containers (ex. mild steel, aluminum, etc.)**

**Section VIII - Control Measures**

Respiratory Protection (Specify Type) **For exposure to severe mist or vapor, use NIOSH/MSHA Acid Gas Respirator with Facepiece.**

Ventilation	Local Exhaust	Special
	Mechanical (General) Adequate Ventilation	Other
Protective Gloves	Neoprene or Rubber	Eye Protection <b>Chemical Type Goggles</b>

Other Protective Clothing or Equipment **Uniforms, Coveralls or Lab Coats**

Work/Hygienic Practices **Avoid Contact with Skin, Eyes & Mucous Membranes.**



## Material Safety Data Sheet

### Revision Date

21-Sep-2005

### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

**Product code** 99063  
**Product name** Valve Action Paint Marker - White  
**Recommended Use** Marker  
  
**Supplier** Lawson Products, Inc.  
 1666 East Touhy Avenue  
 Des Plaines, IL 60018  
 (847)-827-9666  
  
**Emergency telephone number** (888) 426-4851

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Flammable Liquid. Harmful by inhalation. May cause eye/skin irritation.

#### Aggravated Medical Conditions

Pre-existing skin, eye, or respiratory conditions may be aggravated by exposure to this product. Pre-existing diseases of the central nervous system.

#### Principal Routes of Exposure

Skin. Inhalation.

#### Potential health effects

**Eyes** Exposure to vapors may cause the following effects: Irritation.  
  
**Skin** Repeated or prolonged exposure may cause: Dermatitis. Harmful in contact with skin. May be absorbed through the skin in harmful amounts.  
  
**Inhalation** Not likely to occur. Misuse by deliberately concentrating vapors and inhaling contents can be harmful or fatal. Exposure to vapors may cause the following effects. Central nervous system depression.  
  
**Ingestion** Not likely to occur. Toxic if swallowed. Swallowing substance may cause the following effects: Aspiration hazard. May cause severe lung damage if aspirated into the lungs from ingestion or vomiting.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Solvent naphtha (petroleum), medium aliphatic	64742-88-7	20-30
Stoddard solvent	8052-41-3	10-20
Ligroine	8032-32-4	10-30
Xylene (mix)	1330-20-7	5-10
Ethyl benzene	100-41-4	1-5

### 4. FIRST AID MEASURES

**Eye contact** Flush with plenty of water for at least 20 minutes. Keep eye wide open while rinsing. Seek medical attention immediately.  
  
**Skin contact** Wash area thoroughly with soap and water. Seek medical attention.  
  
**Ingestion** Never induce vomiting if the victim is unconscious or having convulsions. Rinse mouth with water and spit out rinse. Do not induce vomiting. Vomiting may cause aspiration pneumonia. Keep head below hips if vomiting occurs.  
  
**Inhalation** Remove to fresh air. If not breathing, give artificial respiration. Seek medical attention.

### 5. FIRE FIGHTING MEASURES

**Flash point °C** 23  
**Flash point °F** 73  
**Method** No information available  
  
**Autoignition temperature °C** No data available  
**Autoignition temperature °F** No data available  
  
**Flammability Limits (% in Air)**  
**Upper** No data available  
**Lower** No data available

#### Suitable extinguishing media

Water spray. Dry chemical. Carbon dioxide. alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry powder.

#### Special protective equipment for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

#### Fire and Explosion Hazards

Water should be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. Vapors are heavier than air and may travel along the ground to an ignition source distant from material handling area. Possible ignition sources include pilot lights, flames, lighted cigarettes, heating elements, electric motors, sparks from electrical switches. Evacuate area of unprotected and unnecessary personnel. Flammable liquid.

#### Sensitivity to shock

No information available.

**Sensitivity to static discharge**

Yes. Take precautionary measures against static discharges.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Ensure adequate ventilation.

**Environmental precautions**

Do not flush into surface water or sanitary sewer system.

**Methods for cleaning up**

Shut off source of leak if safe to do so. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

**7. HANDLING AND STORAGE****Handling**

Avoid breathing vapors. Do not ingest. Avoid contact with skin and eyes. Keep out of reach of children. Do not smoke while using. Keep container closed when not in use.

**Storage**

Keep tightly closed in a dry and cool place. Keep away from direct sunlight. Keep away from heat and sources of ignition.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure limits**

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Solvent naphtha (petroleum), medium aliphatic	100 ppm	-	-	-
Ligroine	-	-	300 ppm	-
Stoddard solvent	2900 mg/m <sup>3</sup> 500 ppm	-	100 ppm	-
Xylene (mix)	100 ppm 435 mg/m <sup>3</sup>	-	100 ppm	150 ppm
Ethyl benzene	100 ppm 435 mg/m <sup>3</sup>	-	100 ppm	125 ppm

**Ventilation and Environmental Controls**

Adequate ventilation should be provided to keep exposure levels below current acceptable exposure limits.

**Hygiene measures**

Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands after handling the product.

**Respiratory protection**

None required if adequate ventilation is provided. If the exposure limits are exceeded, a NIOSH/MSHA approved respirator is recommended.

**Hand protection**

Protective gloves. Butyl rubber gloves.

**Eye protection**

None necessary under normal use conditions.

**Skin and body protection**

No information available

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Form</b>	Liquid
<b>Color</b>	White
<b>Odor</b>	Solvent
<b>Odor Threshold</b>	No information available
<b>pH</b>	No data available
<b>Specific Gravity</b>	No data available
<b>Vapor pressure</b>	No data available
<b>Vapor density</b>	No data available
<b>Evaporation Rate</b>	No data available
<b>Water solubility</b>	Insoluble
<b>Partition Coefficient (n-octanol/water)</b>	No data available
<b>Boiling point/range °C</b>	118
<b>Boiling point/range °F</b>	244
<b>Melting point/range °C</b>	No data available
<b>Melting point/range °F</b>	No data available
<b>Flash point °C</b>	23
<b>Flash point °F</b>	73

**10. STABILITY AND REACTIVITY****Stability**

Stable.

**Conditions to avoid**

Vapors can be ignited by static discharge. Avoid heat, sparks, and other sources of ignition. Avoid open flames.

**Materials to avoid**

Incompatible with oxidizing agents.

**Hazardous decomposition products**

Carbon monoxide. Carbon dioxide. Toxic vapors. Thermal decomposition can lead to release of irritating gases and vapours.

**Polymerization**

Will not occur.

**11. TOXICOLOGICAL INFORMATION****Component Information**

Chemical Name	LD50 (oral, rat)	LD50 (dermal, rat/rabbit)	LC50 (inhalation, rat)
<i>Solvent naphtha (petroleum), medium aliphatic</i> 64742-88-7	5000 mg/kg	3000 mg/kg	5.28 mg/L
<i>Ligroine</i> 8032-32-4	-	-	3400 ppm
<i>Stoddard solvent</i> 8052-41-3	-	-	-
<i>Xylene (mix)</i> 1330-20-7	4300 mg/kg	1700 mg/kg	5000 ppm
<i>Ethyl benzene</i> 100-41-4	3500 mg/kg	15354 mg/kg	17.2 mg/L



**Synergistic Products** No information available

**Potential health effects**

**Sensitization** This product is not a skin sensitizer

**Chronic toxicity** No information available

**Mutagenic effects** No information available.

**Teratogenic effects** No information available

**Reproductive toxicity** May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility.

**Target Organ Effects** Chronic overexposure can cause: .  
May cause damage to liver. May cause damage to kidneys. May cause damage to blood. May cause cancer.

**Carcinogenic effects**  
See table below

Chemical Name	ACGIH OEL - Carcinogens	IARC	NTP - Known Carcinogens	NTP - Suspected Human Carcinogens	OSHA RTK Carcinogens
Solvent naphtha (petroleum), medium aliphatic	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Ligroine	A3 - Confirmed animal carcinogen with unknown relevance to humans	Not Listed	Not Listed	Not Listed	Not Listed
Stoddard solvent	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Xylene (mix)	A4 - Not Classifiable as a Human Carcinogen	Not Listed	Not Listed	Not Listed	Not Listed
Ethyl benzene	A3 - Confirmed animal carcinogen with unknown relevance to humans	Group 2B	Not Listed	Not Listed	Listed

**12. ECOLOGICAL INFORMATION**

Xylene (mix)

**Microtox Data**

*Photobacterium phosphoreum* EC50=0.0084 mg/L (24 h)

**Water Flea Data**

*water flea* EC50=3.82 mg/L (48 h)

Ethyl benzene

**Microtox Data**

*Photobacterium phosphoreum* EC50=9.68 mg/L (30 min)

**Water Flea Data**

*water flea* EC50=2.1 mg/L (48 h)

**13. DISPOSAL CONSIDERATIONS**

**Disposal Information**

Dispose in accordance with federal, state, and local regulations

**Waste from residues / unused products**

Water contamination should be avoided.

**14. TRANSPORTATION INFORMATION**

**DOT**

Printing ink (Xylene (mix),Ethyl benzene),3,UN1210,PG III

*Exception:* (Flammable Liquids PG III not more than 5.0L) Consumer Commodity ORM-D

**TDG**

PRINTING INK(Xylene (mix),Ethyl benzene), Class 3,UN1210,PG III

**IMDG/IMO**

Printing ink(Xylene (mix),Ethyl benzene),UN1210,PG III

**IATA**

Printing ink(Xylene (mix),Ethyl benzene),UN1210,PG III

**MEX**

UN1210 Tinta(Xylene (mix),Ethyl benzene),3,

**15. REGULATORY INFORMATION**

Chemical Name	US EPA SARA 313 Emission Reporting
Xylene (mix)	Listed
Ethyl benzene	Listed

Chemical Name	New Jersey - RTK	Pennsylvania - RTK	California Prop. 65
Solvent naphtha (petroleum), medium aliphatic	Not Listed	Not Listed	Not Listed
Ligroine	Listed	Listed	Not Listed
Stoddard solvent	Listed	Listed	Not Listed
Xylene (mix)	Not Listed	Listed	Not Listed
Ethyl benzene	Listed	Listed	Carcinogen

Chemical Name	EINECS	DSL	NDSL	TSCA
Solvent naphtha (petroleum), medium aliphatic	X	X	-	X
Ligroine	X	X	-	X
Stoddard solvent	X	X	-	X
Xylene (mix)	X	X	-	X
Ethyl benzene	X	X	-	X

**CPRC**

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all of the information required by the Controlled Product Regulations

**16. OTHER INFORMATION**

**NFPA**

**Health - 2**  
**Flammability - 3**  
**Reactivity - 0**

**Prepared By**

Cherylyn McHugh, Regulatory  
Affairs Specialist

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

**Material Safety Data Sheet**

May be used to comply with  
SHA's Hazard Communication Standard,  
29 CFR 1910.1200. Standard must be  
consulted for specific requirements.

**U. S. Department of Labor**  
Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072

<b>Identity</b> (As used on Label and List) <div style="text-align: center; border: 1px solid black; border-radius: 50%; width: 100px; margin: 0 auto; padding: 5px;">UNLIME®</div>	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to so indicate.
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**Section I**

<b>Manufacturer's Name</b> Dist. by A. O. Smith Water Products Co.	<b>Emergency Telephone Number</b> (847) 564-2320
<b>Address (Number, Street, City, State, and ZIP Code)</b> 5621 W. 115th Street Alsip, IL 60803-5163	<b>Telephone Number for Information</b> (847) 564-2320
	<b>Date Prepared</b> 12/1/1998
	<b>Signature of Preparer (optional)</b> 

**Section II - Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Phosphoric Acid	CAS #7664-38-2	1 Mg/M <sup>3</sup>	1 Mg/M <sup>3</sup>	

**Section III - Physical/Chemical Characteristics**

<b>Boiling Point</b> 101° C	<b>Specific Gravity (H<sub>2</sub>O = 1)</b> 1.12 - 1.25
<b>Vapor Pressure (mm Hg.)</b> Non-Volatile	<b>Melting Point/Freezing Point</b> - 4.0° C. to - 19.0° C.
<b>Vapor Density (Air = 1)</b> Non-Volatile	<b>Evaporation Rate</b> Butyl Acetate = 1 Non-Volatile
<b>Solubility in Water</b> 100%	
<b>Appearance and Odor</b> Red Colored, Odorless Solution	

**Section IV - Fire and Explosion Hazard Data**

<b>Flash Point (Method Used)</b> Non - Combustible	<b>Flammable Limits</b> Not Applicable	<b>LEL</b> 	<b>UEL</b> 
<b>Extinguishing Media</b> Not Applicable			
<b>Special Fire Fighting Procedures</b> Use full protective clothing and self contained breathing apparatus.			

**Unusual Fire and Explosion Hazards**

Under fire conditions, may decompose to emit irritating phosphorous oxide fumes.

Contact with common metals produces hydrogen which may form flammable mixtures with air.

**Section V - Reactivity Data**

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid) Contact with reactive metals (Ex. Mild Steel, Magnesium, Aluminum, Zinc, Etc.) Produces Hydrogen Which May Form Flammable Mixtures With Air. Highly Reactive With Strong Bases. At Flame Temperatures, Will Emit Phosphorous Oxide Fumes.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

**Section VI - Health Hazard Data**

Route(s) of Entry                      Inhalation? **Irritant**                                      Skin? **Irritant**                                      Ingestion? **Slightly Hazardous**

Health Hazards (Acute and Chronic) Phosphoric Acid is the least corrosive of the common mineral acids. It is completely and rapidly soluble in water. If exposed areas are flushed properly and thoroughly with water there should be no harm. Longer term exposure may lead to rash or burns.

Carcinogenity                                      NTP **NO**                                      IARC Monographs **NO**                                      OSHA Regulated **NO**

FDA GRAS List, Permitted in Food 116.4

Signs and Symptoms of Exposure **Respiratory, Skin and/or Eye Irritant**

Medical Conditions

Generally Aggravated by Exposure **None Known**

Emergency and First Aid Procedures (1) Eyes: Flush with copious water for at least 15 minutes. If irritation persists Get Medical Attention. (2) Skin: Wash off with water. If irritation persists, Get Medical Attention. (3) Inhalation: Remove from exposure. If breathing is difficult or discomfort persists, Get Medical Attention. (4) Ingestion: Rinse mouth with water, give copious water to cause dilution in stomach. Do not cause vomiting. Get Medical Attention.

**Section VII - Precautions for Safe Handling and Use**

Steps to Be Taken in Case Material is Released or Spilled **Neutralize spill area with soda ash & then flush with copious amounts of water. Adequate ventilation required if vapor or mist conditions exist.**

Waste Disposal Method **According to Local, State & Federal Regulations.**

Precautions to Be Taken in Handling and Storing **Store in cool, dry, well ventilated location. Store in suitable containers (ex.) glass, fiberglass, reinforced plastic, poly. lined drums, type 316 stainless steel etc.)**

Other Precautions **Do not store in reactive metal containers (ex. mild steel, aluminum, etc.)**

**Section VIII - Control Measures**

Respiratory Protection (Specify Type) **For exposure to severe mist or vapor, use NIOSH/MSHA Acid Gas Respirator with Facepiece.**

Ventilation	Local Exhaust	Special
	Mechanical (General) Adequate Ventilation	Other
Protective Gloves	Neoprene or Rubber	Eye Protection <b>Chemical Type Goggles</b>

Other Protective Clothing or Equipment **Uniforms, Coveralls or Lab Coats**

Work/Hygienic Practices **Avoid Contact with Skin, Eyes & Mucous Membranes.**



## Material Safety Data Sheet

### Revision Date

21-Sep-2005

### 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

**Product code** 99063  
**Product name** Valve Action Paint Marker - White  
**Recommended Use** Marker

**Supplier** Lawson Products, Inc.  
 1666 East Touhy Avenue  
 Des Plaines, IL 60018  
 (847)-827-9666

**Emergency telephone number** (888) 426-4851

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Flammable Liquid. Harmful by inhalation. May cause eye/skin irritation.

#### Aggravated Medical Conditions

Pre-existing skin, eye, or respiratory conditions may be aggravated by exposure to this product. Pre-existing diseases of the central nervous system.

#### Principal Routes of Exposure

Skin. Inhalation.

#### Potential health effects

**Eyes** Exposure to vapors may cause the following effects: Irritation.

**Skin** Repeated or prolonged exposure may cause: Dermatitis. Harmful in contact with skin. May be absorbed through the skin in harmful amounts.

**Inhalation** Not likely to occur. Misuse by deliberately concentrating vapors and inhaling contents can be harmful or fatal. Exposure to vapors may cause the following effects. Central nervous system depression.

**Ingestion** Not likely to occur. Toxic if swallowed. Swallowing substance may cause the following effects: Aspiration hazard. May cause severe lung damage if aspirated into the lungs from ingestion or vomiting.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Solvent naphtha (petroleum), medium aliphatic	64742-88-7	20-30
Stoddard solvent	8052-41-3	10-20
Ligroine	8032-32-4	10-30
Xylene (mix)	1330-20-7	5-10
Ethyl benzene	100-41-4	1-5

### 4. FIRST AID MEASURES

**Eye contact** Flush with plenty of water for at least 20 minutes. Keep eye wide open while rinsing. Seek medical attention immediately.

**Skin contact** Wash area thoroughly with soap and water. Seek medical attention.

**Ingestion** Never induce vomiting if the victim is unconscious or having convulsions. Rinse mouth with water and spit out rinse. Do not induce vomiting. Vomiting may cause aspiration pneumonia. Keep head below hips if vomiting occurs.

**Inhalation** Remove to fresh air. If not breathing, give artificial respiration. Seek medical attention.

### 5. FIRE FIGHTING MEASURES

**Flash point °C** 23  
**Flash point °F** 73  
**Method** No information available

**Autoignition temperature °C** No data available  
**Autoignition temperature °F** No data available

**Flammability Limits (% in Air)**  
**Upper** No data available  
**Lower** No data available

#### Suitable extinguishing media

Water spray. Dry chemical. Carbon dioxide. alcohol-resistant foam. Carbon dioxide (CO<sub>2</sub>). Dry powder.

#### Special protective equipment for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

#### Fire and Explosion Hazards

Water should be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. Vapors are heavier than air and may travel along the ground to an ignition source distant from material handling area. Possible ignition sources include pilot lights, flames, lighted cigarettes, heating elements, electric motors, sparks from electrical switches. Evacuate area of unprotected and unnecessary personnel. Flammable liquid.

#### Sensitivity to shock

No information available.

**Sensitivity to static discharge**

Yes. Take precautionary measures against static discharges.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Ensure adequate ventilation.

**Environmental precautions**

Do not flush into surface water or sanitary sewer system.

**Methods for cleaning up**

Shut off source of leak if safe to do so. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

**7. HANDLING AND STORAGE****Handling**

Avoid breathing vapors. Do not ingest. Avoid contact with skin and eyes. Keep out of reach of children. Do not smoke while using. Keep container closed when not in use.

**Storage**

Keep tightly closed in a dry and cool place. Keep away from direct sunlight. Keep away from heat and sources of ignition.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure limits**

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Solvent naphtha (petroleum), medium aliphatic	100 ppm	-	-	-
Ligroine	-	-	300 ppm	-
Stoddard solvent	2900 mg/m <sup>3</sup> 500 ppm	-	100 ppm	-
Xylene (mix)	100 ppm 435 mg/m <sup>3</sup>	-	100 ppm	150 ppm
Ethyl benzene	100 ppm 435 mg/m <sup>3</sup>	-	100 ppm	125 ppm

**Ventilation and Environmental Controls**

Adequate ventilation should be provided to keep exposure levels below current acceptable exposure limits.

**Hygiene measures**

Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands after handling the product.

**Respiratory protection**

None required if adequate ventilation is provided. If the exposure limits are exceeded, a NIOSH/MSHA approved respirator is recommended.

**Hand protection**

Protective gloves. Butyl rubber gloves.

**Eye protection**

None necessary under normal use conditions.

**Skin and body protection**

No information available

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Form</b>	Liquid
<b>Color</b>	White
<b>Odor</b>	Solvent
<b>Odor Threshold</b>	No information available
<b>pH</b>	No data available
<b>Specific Gravity</b>	No data available
<b>Vapor pressure</b>	No data available
<b>Vapor density</b>	No data available
<b>Evaporation Rate</b>	No data available
<b>Water solubility</b>	Insoluble
<b>Partition Coefficient (n-octanol/water)</b>	No data available
<b>Boiling point/range °C</b>	118
<b>Boiling point/range °F</b>	244
<b>Melting point/range °C</b>	No data available
<b>Melting point/range °F</b>	No data available
<b>Flash point °C</b>	23
<b>Flash point °F</b>	73

**10. STABILITY AND REACTIVITY****Stability**

Stable.

**Conditions to avoid**

Vapors can be ignited by static discharge. Avoid heat, sparks, and other sources of ignition. Avoid open flames.

**Materials to avoid**

Incompatible with oxidizing agents.

**Hazardous decomposition products**

Carbon monoxide. Carbon dioxide. Toxic vapors. Thermal decomposition can lead to release of irritating gases and vapours.

**Polymerization**

Will not occur.

**11. TOXICOLOGICAL INFORMATION****Component Information**

Chemical Name	LD50 (oral, rat)	LD50 (dermal, rat/rabbit)	LC50 (inhalation, rat)
<i>Solvent naphtha (petroleum), medium aliphatic</i> 64742-88-7	5000 mg/kg	3000 mg/kg	5.28 mg/L
<i>Ligroine</i> 8032-32-4	-	-	3400 ppm
<i>Stoddard solvent</i> 8052-41-3	-	-	-
<i>Xylene (mix)</i> 1330-20-7	4300 mg/kg	1700 mg/kg	5000 ppm
<i>Ethyl benzene</i> 100-41-4	3500 mg/kg	15354 mg/kg	17.2 mg/L

**Synergistic Products** No information available

**Potential health effects**

**Sensitization** This product is not a skin sensitizer

**Chronic toxicity** No information available

**Mutagenic effects** No information available.

**Teratogenic effects** No information available

**Reproductive toxicity** May cause adverse reproductive effects - such as birth defect, miscarriages, or infertility.

**Target Organ Effects** Chronic overexposure can cause: .  
May cause damage to liver. May cause damage to kidneys. May cause damage to blood. May cause cancer.

**Carcinogenic effects**  
See table below

Chemical Name	ACGIH OEL - Carcinogens	IARC	NTP - Known Carcinogens	NTP - Suspected Human Carcinogens	OSHA RTK Carcinogens
Solvent naphtha (petroleum), medium aliphatic	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Ligroine	A3 - Confirmed animal carcinogen with unknown relevance to humans	Not Listed	Not Listed	Not Listed	Not Listed
Stoddard solvent	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Xylene (mix)	A4 - Not Classifiable as a Human Carcinogen	Not Listed	Not Listed	Not Listed	Not Listed
Ethyl benzene	A3 - Confirmed animal carcinogen with unknown relevance to humans	Group 2B	Not Listed	Not Listed	Listed

**12. ECOLOGICAL INFORMATION**

Xylene (mix)

**Microtox Data**

*Photobacterium phosphoreum* EC50=0.0084 mg/L (24 h)

**Water Flea Data**

*water flea* EC50=3.82 mg/L (48 h)

Ethyl benzene

**Microtox Data**

*Photobacterium phosphoreum* EC50=9.68 mg/L (30 min)

**Water Flea Data**

*water flea* EC50=2.1 mg/L (48 h)

**13. DISPOSAL CONSIDERATIONS**

**Disposal Information**

Dispose in accordance with federal, state, and local regulations

**Waste from residues / unused products**

Water contamination should be avoided.

**14. TRANSPORTATION INFORMATION**

**DOT**

Printing ink (Xylene (mix),Ethyl benzene),3,UN1210,PG III

*Exception:* (Flammable Liquids PG III not more than 5.0L) Consumer Commodity ORM-D

**TDG**

PRINTING INK(Xylene (mix),Ethyl benzene), Class 3,UN1210,PG III

**IMDG/IMO**

Printing ink(Xylene (mix),Ethyl benzene),UN1210,PG III

**IATA**

Printing ink(Xylene (mix),Ethyl benzene),UN1210,PG III

**MEX**

UN1210 Tinta(Xylene (mix),Ethyl benzene),3,

**15. REGULATORY INFORMATION**

Chemical Name	US EPA SARA 313 Emission Reporting
Xylene (mix)	Listed
Ethyl benzene	Listed

Chemical Name	New Jersey - RTK	Pennsylvania - RTK	California Prop. 65
Solvent naphtha (petroleum), medium aliphatic	Not Listed	Not Listed	Not Listed
Ligroine	Listed	Listed	Not Listed
Stoddard solvent	Listed	Listed	Not Listed
Xylene (mix)	Not Listed	Listed	Not Listed
Ethyl benzene	Listed	Listed	Carcinogen

Chemical Name	EINECS	DSL	NDSL	TSCA
Solvent naphtha (petroleum), medium aliphatic	X	X	-	X
Ligroine	X	X	-	X
Stoddard solvent	X	X	-	X
Xylene (mix)	X	X	-	X
Ethyl benzene	X	X	-	X

**CPRC**

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all of the information required by the Controlled Product Regulations

**16. OTHER INFORMATION**

**NFPA**

**Health** - 2  
**Flammability** - 3  
**Reactivity** - 0

**Prepared By**

Cherylyn McHugh, Regulatory  
Affairs Specialist

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.





# Material Safety Data Sheet

## 1 - Chemical Product and Company Identification

<b>Manufacturer:</b> WD-40 Company <b>Address:</b> 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 -0607  <b>Telephone:</b> <b>Emergency only:</b> 1-888-324-7596 (PROSAR) <b>Information:</b> 1-888-324-7596 <b>Chemical Spills:</b> 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)	<b>Chemical Name:</b> Organic Mixture  <b>Trade Name:</b> WD-40 Aerosol  <b>Product Use:</b> Cleaner, Lubricant  <b>MSDS Date Of Preparation:</b> 8/05/09
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## 2 – Hazards Identification

<b>Emergency Overview:</b> <b>DANGER!</b> Flammable aerosol. Contents under pressure. Harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage. May cause eye irritation. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.
<b>Symptoms of Overexposure:</b> <b>Inhalation:</b> High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal. <b>Skin Contact:</b> Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis. <b>Eye Contact:</b> Contact may be irritating to eyes. May cause redness and tearing. <b>Ingestion:</b> This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death. <b>Chronic Effects:</b> None expected. <b>Medical Conditions Aggravated by Exposure:</b> Preexisting eye, skin and respiratory conditions may be aggravated by exposure.
<b>Suspected Cancer Agent:</b> Yes    No X

## 3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent
Aliphatic Hydrocarbon	64742-47-8 64742-48-9 64742-88-7	45-50
Petroleum Base Oil	64742-65-0	<25
LVP Aliphatic Hydrocarbon	64742-47-8	12-18
Carbon Dioxide	124-38-9	2-3
Surfactant	Proprietary	<2
Non-Hazardous Ingredients	Mixture	<10

## 4 – First Aid Measures

<b>Ingestion (Swallowed):</b> Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately. <b>Eye Contact:</b> Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists. <b>Skin Contact:</b> Wash with soap and water. If irritation develops and persists, get medical attention.
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**Inhalation (Breathing):** If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

### 5 – Fire Fighting Measures

**Extinguishing Media:** Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

**Special Fire Fighting Procedures:** Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

**Unusual Fire and Explosion Hazards:** Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

### 6 – Accidental Release Measures

Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

### 7 – Handling and Storage

**Handling:** Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

**Storage:** Store in a cool, well-ventilated area, away from incompatible materials Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol.

### 8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	100 ppm TWA (ACGIH) 1200 mg/m <sup>3</sup> TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m <sup>3</sup> TWA, 10 mg/m <sup>3</sup> STEL ACGIH TLV 5 mg/m <sup>3</sup> TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m <sup>3</sup> TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Surfactant	None Established
Non-Hazardous Ingredients	None Established

#### The Following Controls are Recommended for Normal Consumer Use of this Product

**Engineering Controls:** Use in a well-ventilated area.

**Personal Protection:**

**Eye Protection:** Avoid eye contact. Always spray away from your face.

**Skin Protection:** Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

**Respiratory Protection:** None needed for normal use with adequate ventilation.

#### For Bulk Processing or Workplace Use the Following Controls are Recommended

**Engineering Controls:** Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

**Personal Protection:****Eye Protection:** Safety goggles recommended where eye contact is possible.**Skin Protection:** Wear chemical resistant gloves.**Respiratory Protection:** None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.**Work/Hygiene Practices:** Wash with soap and water after handling.**9 – Physical and Chemical Properties**

Boiling Point:	323°F (minimum)	Specific Gravity:	0.817 @ 72°F
Solubility in Water:	Insoluble	pH:	Not Applicable
Vapor Pressure:	110 PSI @ 70°F	Vapor Density:	Greater than 1
Percent Volatile:	74%	VOC:	412 grams/liter (49.5%)
Coefficient of Water/Oil Distribution:	Not Determined	Appearance/Odor	Light amber liquid/mild odor
Flash Point:	131°F (concentrate) Tag Closed Cup	Flammable Limits: (Solvent Portion)	LEL: 1.1% UE:: 8.9%

**10 – Stability and Reactivity****Stability:** Stable**Hazardous Polymerization:** Will not occur.**Conditions to Avoid:** Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.**Incompatibilities:** Strong oxidizing agents.**Hazardous Decomposition Products:** Carbon monoxide and carbon dioxide.**11 – Toxicological Information**

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

**12 – Ecological Information**

No data is currently available.

**13 - Disposal Considerations**

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

**14 – Transportation Information**

DOT Surface Shipping Description: Consumer Commodity, ORM-D

IMDG Shipping Description: Un1950, Aerosols, 2.1, LTD QTY

**15 – Regulatory Information****U.S. Federal Regulations:****CERCLA 103 Reportable Quantity:** This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.**SARA TITLE III:****Hazard Category For Section 311/312:** Acute Health, Fire Hazard, Sudden Release of Pressure

**Section 313 Toxic Chemicals:** This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None  
Section 302 Extremely Hazardous Substances (TPQ): None  
**EPA Toxic Substances Control Act (TSCA) Status:** All of the components of this product are listed on the TSCA inventory.  
**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):** This product does not contain chemicals regulated under California Proposition 65.  
**VOC Regulations:** This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.  
**Canadian Environmental Protection Act:** One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.  
**Canadian WHMIS Classification:** Class B-5 (Flammable Aerosol)  
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

**16 – Other Information:**

**HMIS Hazard Rating:**  
**Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)**

SIGNATURE: 

TITLE: Director of Global Quality Assurance

REVISION DATE: August 2009

SUPERSEDES: March 2009

## Material Safety Data Sheet

**MSDS Date:** 5/9/07  
**Product Name:** X-PANDO PIPE JOINT COMPOUND  
**Manufacturer:** X-Pando Products Company

### 1. Product and Company Description

X-Pando Products Company  
500 Southard Street  
Trenton, NJ 08638

**For Product Emergency/Information:**  
609-394-0150

**Product Use:**  
Sealant for threaded and flanged pipe

### 2. Hazards Identification

#### Emergency Overview

**Appearance/Odor:** Gray to Black powder with no odor.

#### Potential Health Effects:

**Acute Eye:**

May cause mechanical irritation if exposed to large amounts of the dust.

**Acute Skin:**

This product may cause skin irritation.

**Acute Inhalation:**

May cause irritation to respiratory tract and lung damage if exposure is repeated or prolonged. Although unlikely, inhalation of fumes from heated material may cause metal fume fever, a flu-like illness characterized by delayed symptoms of cough, muscle pains chills and nausea.

**Acute ingestion:**

This product may cause gastrointestinal harm and nausea if it is swallowed.

**Chronic Exposure:**

Prolonged or repeated skin contact may cause burns. Prolonged inhalation of dust may lead to lung damage (pneumoconiosis). Symptoms include coughing, difficulty breathing, and the production of black sputum. Symptoms may be delayed until after years of exposure.

**Aggravation of Pre-existing Conditions:**

Individuals with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation should be precluded from exposure.

### 3. Hazardous Chemical Composition

Component	CAS#	%
Magnesium Oxide	1309-48-4	10-30
Graphite (synthetic)	7782-42-5	7-13
Magnesium Chloride	7791-18-6	15-40
Calcium Carbonate	1317-65-3	15-40
Starch Gum	9004-53-9	1-5
Non Hazardous Ingredients	NA	Balance

### 4. First Aid Measures

#### First Aid Measures for Accidental:

**Eye Exposure:**

Irrigate eyes with large amounts of water for at least 15 minutes, while holding the eyelid(s) open. Seek medical attention if irritation persists.

**Skin Exposure:**

Wash the affected area with soap and water. Seek medical attention if irritation persists.

**Inhalation:**

Move victim to fresh air and treat symptomatically.

**Ingestion:**

Contact local poison control center or physician IMMEDIATELY.

### 5. Fire Fighting Measures

#### Fire Hazard Data:

**Autoignition:** N/A

**Flash Point:** N/A

**Flammability Limits (vol/vol%):**

**Lower:**  
N/A

**Upper:**  
N/A

**Extinguishing Media:**

Use medium suitable for surrounding material.

**Special Fire Fighting Procedures:**

Firefighters should wear full fire-fighting turn-out gear (full Bunker gear) including NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**Unusual Fire and Explosion Hazards:**

Fire produces oxides of magnesium, calcium and carbon.

## 6. Accidental Release Measures

### Cleanup and Disposal of Spill:

Vacuum or scoop spilled material and place in closed containers for disposal. Avoid dust generation. Dispose of waste in accordance with local, state and federal regulations.

## 7. Handling and Storage

### Handling/Storage:

Avoid dust generation and wear proper personal protection equipment as identified in Section 8. Store in a closed container in dry area.

## 8. Exposure Controls / Personal Protection

### Exposure Guidelines:

Component	ACGIH	OSHA-PELs
Magnesium Oxide	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> respirable dust
Graphite (synthetic)	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Magnesium Chloride	5 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
Calcium Carbonate	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> respirable dust
Starch Gum	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
Non Hazardous Ingredients	NA	NA

### Engineering Controls:

Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS.

### Respiratory Protection:

If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces.

### Eye / Face Protection:

Chemical splash goggles or safety glasses. Emergency eye wash stations and showers should be available within the work area.

### Skin Protection:

Wear chemical resistant, impervious gloves for routine industrial use. Use body protection appropriate for task. An apron or other impermeable body protection is suggested. Full-body chemical protective clothing is recommended for emergency response procedures.

## 9. Physical and Chemical Properties

**Physical Appearance:** Gray to Black powder

**Odor:** None

**pH:** NA

**Specific Gravity/Density:** 2.56

**Water Solubility:** Appreciable

**Melting Point:** N/A  
**Freezing Point** ND  
**Boiling Point:** N/A  
**Vapor Pressure:** ND  
**Percent Volatiles by Volume:** ND  
**Evaporation Rate:** ND  
**Viscosity:** ND  
**Flash Point:** N/A  
**Explosion Limits:** Lower: N/A  
Upper: N/A  
**Autoignition Temp:** N/A

## 10. Stability and Reactivity

**Chemical Stability:**

Stable

**Conditions to Avoid:**

Dust generation

**Materials / Chemicals to Be Avoided:**

Avoid contact with strong acids and strong bases.

**Hazardous Decomposition Products:**

Hazardous decomposition products such as hydrogen chloride, chlorine and magnesium oxide fumes may develop with exposure to high temperatures.

**Hazardous Polymerization:**

Will not occur.

## 11. Toxicological Information

**Acute Effects**

For Magnesium Oxide: LD50 Mouse: 810 mg/kg

For Magnesium Chloride: LD50 Rat: 8100 mg/kg

**Chronic Effects**

Carcinogenicity: Not identified as a carcinogen by NTP, IARC or OSHA

Mutagenicity: No Data

Reproductive Effects: No Data

Developmental Effects: No Data

## 12. Ecological Information

**Environmental Fate:**

No information found

**Environmental Toxicity:**

No information found



**13. Disposal Considerations**

**Waste Disposal Method:**

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**14. Transportation Information**

**US Department of Transportation Shipping Name:**

<b>US Department of Transportation</b>	<b>Proper Shipping Name</b>	Not regulated
	<b>Hazard Class</b>	Not regulated
	<b>ID Number</b>	Not regulated
	<b>Packing Group</b>	Not regulated

**15. Regulatory Information**

**Federal Regulations:**

**SARA Title III Hazard Classes:**

Fire Hazard: No  
 Reactive Hazard: No  
 Release of Pressure: No  
 Acute Health Hazard: No  
 Chronic Health Hazard: No

**TSCA**

All components of this product are on the TSCA inventory or are exempt from TSCA Inventory requirements

**U.S. State Regulations:**

California Prop 65 List: None

**Canada Regulations:**

Classification: D2

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**16. Other Information**

**National Fire Protection Association NFPA(R) and Hazardous Materials Identification System (HMIS) Hazard Ratings –:**

Health Hazard: 1  
 Flammability: 0  
 Reactivity: 0

**Key Legend Information:**

N/A – Not Applicable

ND – Not Determined

ACGIH – American Conference of  
Governmental Industrial Hygienists

OSHA – Occupational Safety and Health  
Administration

TLV – Threshold Limit Value

IDLH – Immediately Dangerous to Life and  
Health

PEL – Permissible Exposure Limit

TWA – Time Weighted Average

STEL – Short Term Exposure Limit

NTP – National Toxicology Program

IARC – International Agency for Research on  
Cancer

## Appendix A

## Material Safety Data Sheet

## U.S. Department of Labor

Occupational Safety and Health Administration

(Non-Mandatory Form)

Form Approved

OMB No. 1218-0072

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.  
Standard must be consulted for specific requirements.

IDENTITY (As Used on Label and List)

OILED OAKUM

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

## Section I

Manufacturer's Name

NUPAK OF NEW ORLEANS

Emergency Telephone Number

866-567-7716

Address (Number, Street, City, State, and ZIP Code)

931 DANIEL STREET

Telephone Number for Information

504-466-1484

KENNER, LA 70062

Date Prepared

JAN 02, 2008

Signature of Preparer (optional)

## Section II - Hazard Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	%(optional)
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THERE ARE NO HAZARDOUS COMPONENTS IN THIS PRODUCT  
OIL, BENTONITE AND BURLAP OR HEMP

NUPAK #5 PRODUCT #10205

NUPAK #50 PRODUCT #10250

NUPAK #1 PRODUCT #10201

## Section III - Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H <sub>2</sub> O = 1)	N/A
Vapor Pressure (mm Hg.)	N/A	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water	N/A		

Appearance and Odor

IN ROPE FORM, BROWN IN COLOR WITH NO ODOR

## Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	N/A	Flammable Limits	N/A	LEL	UEL
Extinguishing Media	WATER SPRAY, DRY CHEMICAL OR FOAM				
Special Fire Fighting Procedures	N/A				

Unusual Fire and Explosion Hazards

OAKUM THAT IS TREATED WITH OIL AND BENTONITE  
WILL NOT NORMALLY BURN

(Reproduce locally)

OSHA 174, Sept. 1985

**Section V - Reactivity Data**

Stability	Unstable	Conditions to Avoid	N/A
	Stable		N/A
Incompatibility (Materials to Avoid)			N/A
Hazardous Decomposition or Byproducts			N/A
Hazardous Polymerization	May Occur	Conditions to Avoid	
	Will Not Occur		N/A

**Section VI - Health Hazard Data**

Route(s) of Entry:	N/A	Inhalation?	Skin?	Ingestion?
Health Hazards (Acute and Chronic)				
Carcinogenicity:	N/A	NTP?	IARC Monographs?	OSHA Regulated?
Signs and Symptoms of Exposure				
N/A				
Medical Conditions Generally Aggravated by Exposure				
N/A				
Emergency and First Aid Procedures				
N/A				

**Section VII - Precautions for Safe Handling and Use**

Steps to Be Taken in Case Material is Released or Spilled
IF A LEAK OCCURS; CLEAN WITH OIL ABSORBING MATERIAL AND DISPOSE OF PROPERLY
Waste Disposal Method
REGULAR
Precautions to Be taken in Handling and Storing
CARTONS SHOULD BE STACKED FLAT
Other Precautions
N/A

**Section VIII - Control Measures**

Respiratory Protection (Specify Type)	N/A		
Ventilation	N/A	Local Exhaust	Special
		Mechanical (General)	Other
Protective Gloves	IF DESIRED	Eye Protection	SAFETY GLASSES SHOULD BE WORN
Other Protective Clothing or Equipment	N/A		
Work/Hygiene Practices	NORMAL PRACTICES		

# Material Safety Data Sheet

## Cast Iron (Tyler Pipe)

Date Printed: 12/15/00  
MSDS Date: 2/18/99

### Section 1: Product and Company Identification

**Product Name:** Cast Iron

**Synonyms:**

**Chemical Name:**

**Chemical Family:**

**Chemical Formula:** N/A

**Manufacturer:** Tyler Pipe Company

**Phone Number:** (903) 882-2226

**Division:**

**FAX:** (903) 882-2222

**Address:** P.O. Box 2027  
Tyler, TX 75710-2027

**Prepared By:**

**Product Use:**

**Section 1 Notes:**

### Section 2: Composition/Information on Ingredients

<b>Carbon</b>		CAS #: 133-86-4	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV: 3.5 mg/m3	ACGIH STEL:	ACGIH Ceiling:	
<b>Chromium</b>		CAS#: 7440-47-3	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH:TLV 0.5 NA	ACGIH STEL:	ACGIH Ceiling:	
<b>Iron:</b>		CAS#: 1307-37-1	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV: 5mg/m3	ACGIH STEL:	ACGIH Ceiling:	
<b>Manganese:</b>		CAS#: 007439-96-5	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV:	ACGIH STEL:	ACGIH Ceiling:	
<b>Molybdenum</b>		CAS#: 7439-98-7	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV:	ACGIH STEL:	ACGIH Ceiling:	
<b>Nickel</b>		CAS#: 7440-02-0	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV:	ACGIH STEL:	ACGIH Ceiling:	
<b>Phosphorus</b>		CAS#: 7723-14-0	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV:	ACGIH STEL:	ACGIH Ceiling:	
<b>Silicon</b>		CAS#: 7440-21-3	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV:	ACGIH STEL:	ACGIH Ceiling:	
<b>Sulfur</b>		CAS#: 7404-34-9	SARA 313 Reportable: No
OSHA PEL:	OSHA STEL:	OSHA Ceiling:	
ACGIH TLV: NA NA	ACGIH STEL:	ACGIH Ceiling:	

**Section 2 Notes:**

# Material Safety Data Sheet

Cast Iron (Tyler Pipe)

Date Printed: 12/15/00

MSDA Date: 2/18/99

## Section 3: Hazards Identification

### Emergency Overview:

Routes of Entry: NA

### Potential Health Effects

Eyes:

Skin:

Ingestion:

Inhalation:

Chronic Health Hazards: NA

Conditions Aggravated by Exposure: NA

Carcinogenicity OSHA: No ACGIH: No NTP: Yes Other: CHROMIUM (Suspected)  
NICKEL (Suspected)

### Section 3 Notes:

## Section 4 First Aid Measures

Eyes: FLUSH WITH LARGE AMOUNTS OF WATER.

Skin: IF DUST OR MIST GETS ON THE SKIN WASH THE CONTAMINATED SKIN WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND LAUNDRY BEFORE USING AGAIN.

Ingestion: NA

Inhalation: IF ACUTE OVEREXPOSURE TO FUMES OCCURS, REMOVE VICTIM FROM THE ADVERSE ENVIRONMENT AND SEEK MEDICAL ATTENTION.

### Notes to First Aid Providers:

### Section 4 Notes:

## Section 5: Fire-Fighting Measures

Flammable Limits in Air Upper: NA Lower: NA Method Used: NA

Flash Point: NA F C

Autoignition Temp: NA F C

FFPA Hazard Classification Health: Flammability: Reactivity: Other:

HMIS Hazard Classification Health: Flammability: Reactivity: Protection:

### Extinguishing Media:

Special Fire Fighting Procedures: NA

Unusual Fire and Explosion Hazards: NA

Hazardous Decomposition Products:

### Section 5 Notes:

## Section 6: Accidental Release Measures

Accidental Release Measures: Material in solid form.

## Section 7: Handling and Storage

### Handling and Storage:

## Section 8: Exposure Control/Personal Protection

### Engineering Controls:

Ventilation: LOCAL EXHAUST: If needed MECHANICAL (GENERAL): If needed

### Respiratory Protection:

Eye Protection: If Welding or Grinding use appropriate eye protection.

Skin Protection: Protective equipment optional.

Other Protective Clothing or Equipment: NA

Work Hygienic Practices: NA

### Exposure Guidelines:

### Section 8 Notes:

# Material Safety Data Sheet

## CAST IRON (TYLER PIPE)

Date Printed: 12/15/00  
MSDS Date: 2/18/99

### Section 9: Physical and Chemical Properties

Appearance: Grey colored metal

Physical State:

Odor: None

Vapor Pressure (mmHg): NA@ F C

Vapor Density (Air=1) NA@ F C

Specific Gravity (H2O=1): 7.03

Evaporation rate: NA Basis

Percent Solids by Weight: Percent Volatile by Weight:

Volatile Organic Compounds (VOC): NA

Section: 9 Notes:

pH as Supplied: NA

pH at Dilution:

Boiling Point: F C

Melting Point: 2300F C

Freezing Point: F C

Viscosity: @ F C

Molecular Weight NA F C

Solubility in Water:

by Volume: @ F C

### Section 10: Stability and Reactivity

Stable: Hazardous Polymerization 3

Conditions to Avoid:

Hazardous Polymerization:

Incompatibilities:

Hazardous Decomposition: NA

Section10 Notes:

### Section 11: Toxicological Information

Toxicological Information

### Section 12: Ecological Information

Ecological Information

### Section 13: Disposal Considerations

Waste Disposal Method: Dispose of in accordance with appropriate Federal, State, and Local regulations. RCRA Hazard Class:

Section 13 Notes:

### Section 14: Transport Information

Proper Shipping Name:

Shipping Instructions:

Shipping Hazards:

Labels:

Other Agencies:

Section 14 Notes:

UN/NA Type:

UN/NA Number:

U.S.D.O.T. ID Number:

Packing Group:

### Section 15: Regulatory Information

T.S.C.A.

U.S. Federal:

International:

SARA 311/312

Section 15 Notes:

Fire: No

Pressure: No

Reactivity: No

Delayed: No

Immediate: No

C.E.R.C.L.A.

State:

### Section 16: Other Information

Preparation Information:

Disclaimer:

Section 16 Notes:

Label Statement:





# WHEATLAND TUBE COMPANY

Wheatland, PA 16161  
(724) 342-6851  
Fax: (724) 342-0294

Dear Customer:

Enclosed is a Wheatland Tube Company Material Safety Data Sheet for the pipe products that you purchase. It is the continuing policy of Wheatland Tube Company to provide to our customers, health, safety and environmental protection information that is appropriate for handling and utilizing our products.

These Material Safety Data Sheets contain information that is valuable to your employee health and safety program and may be required to be in your possession by the Federal OSHA Hazard Communication Standard or other right-to-know legislation. It is important that your facility hazard communication coordinator, industrial hygiene or safety personnel receives this information so that it can be communicated to those employees having contact with these products.

A revised Material Safety Data Sheet will be forwarded to you when significant changes of the information contained therein necessitate publication of an updated copy.

Addendum 2 lists the most commonly used rust preventative or protective coatings that are applied to products requiring such treatment, if a coating is not specified by you. This addendum lists the coatings which are applied and the manufacturer's identification and address. This information is provided to enable you to obtain a Material Safety Data Sheet directly from the manufacturer or supplier for the rust preventative or coating that is applied to the product that you purchase. Material Safety Data Sheets for specified coatings should also be requested from the manufacturer or supplier of the coating. This procedure will make it possible for the manufacturer or supplier to send copies of Material Safety Data Sheets directly to you, as a user of that product, when revised MSDS'S are produced.

Also contained in the package is a label that can be reproduced or the information contained therein extracted for label-producing purposes.

Hazard Communication Programs are of the utmost importance to Wheatland Tube Company. We believe this information will be very beneficial to your Hazard Communication Program and we welcome any inquiries regarding additional information that you may require.

JACK A. GRUBER, Ph.D.  
DIRECTOR - TECHNICAL SERVICES



**WHEATLAND TUBE COMPANY  
MATERIAL SAFETY DATA SHEET**

**II. INGREDIENTS AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS**

Note: steel products under normal conditions do not present an inhalation, ingestion, or contact health hazard (see section VI).

BASE METAL, ALLOYING ELEMENTS AND METAL COATINGS	% WEIGHT	EXPOSURE LIMITS	
		OSHA PEL	ACGIH TLV
Base Metal: Iron (1309-37-1 as iron-oxide fume)	98-99	10 mg/M <sup>3</sup> for iron oxide fume	5 mg/M <sup>3</sup> for iron oxide fume
Alloying Elements:			
Carbon (7440-44-0)	.06-.13	None	None
	.14-.18	Established	Established
	.18-.23		
Manganese (7439-96-5)	.30-.60	(c) 5 mg/M <sup>3</sup>	5 mg/M <sup>3</sup> -dust
	.70-1.15		1 mg/M <sup>3</sup> fume
Phosphorus (7723-14-0)	.015-.035	None for inorganic phosphates	None for Inorganic phosphates
	.040 max		
Sulfur as SO <sub>2</sub> (7446-09-5)	.040 max	13 mg/M <sup>3</sup>	5.2 mg/M <sup>3</sup>
	.050 max		(c) 13 mg/M <sup>3</sup>
Metallic Coating*			
Zinc (1314-13-2 as zinc oxide)	.070-6.0	5 mg/M <sup>3</sup>	10 mg/M <sup>3</sup> -total ZnO dust
			5 mg/M <sup>3</sup>
			Respirable ZnO
			Dust & fume
			(s) 10 mg/M <sup>3</sup>

(c) denotes "ceiling limit" which is not to be exceeded at any time

(s) denotes Short Term Exposure Limit (STEL)

Varnish coating may be used; See Addendum II

\*Galvanized pipe only.

NOTE: All commercial metals contain small amounts of various elements in addition to those specified. These small quantities, frequently referred to as "trace" or "residual" elements, generally originate in the raw materials used.

**WHEATLAND TUBE COMPANY  
MATERIAL SAFETY DATA SHEET**

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**III. PHYSICAL DATA**

**MELTING POINT**

Base Metal: 2750 F  
Metallic Coating: 800-900F

Appearance and Odor:  
Metallic Gray  
No Odor

**IV. FIRE AND EXPLOSION HAZARD DATA**

Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other products.

**V. REACTIVITY DATA**

Stable under normal conditions of use, storage and transport. Will react with strong acid to liberate hydrogen. At temperatures above the melting point of the coating, galvanized pipe may liberate zinc fumes.

**VI. HEALTH HAZARD DATA**

HMIS CODE: H = 1, F = 0, R = 0

NOTE: Steel products under normal conditions do not present an inhalation, ingestion, or contact health hazard. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining, etc. which result in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulate, may present health hazards.

**EFFECTS OF OVEREXPOSURE**

**MAJOR EXPOSURE HAZARD  
INHALATION**

Chronic inhalation of high concentration of iron oxide fumes or dusts may lead to a benign pneumoconiosis. Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

The inhalation of high concentrations of freshly formed oxide fumes and dusts of Manganese, Copper, Lead and/or Zinc in the respirable particle size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness and irritation in the throat, followed by weakness, muscle pain, fever and chills.

**EMERGENCY AND FIRST AID PROCEDURES**

For overexposure to airborne fumes and particulate, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly. Treat metal fume fever by bed rest and administer a pain and fever reducing medication. Seek medical attention.

**VII. SPILL OR LEAK PROCEDURES**

NOT APPLICABLE TO STEEL IN THE SOLID STATE.

**WHEATLAND TUBE COMPANY  
MATERIAL SAFETY DATA SHEET**

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**VII. SPECIAL PROTECTION INFORMATION**

**RESPIRATORY**

NIOSH/MSHA-approved dust and fume respirators should be used to avoid excessive inhalation of particulate. Appropriate respirator selection depends on the magnitude of exposure.

**SKIN:**

Protective gloves should be worn as required for welding, burning, or handling operations.

**EYE:**

Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding, or machining operations.

**VENTILATION:**

Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding, or machining to prevent excessive dust or fume exposure.

**OTHER PROTECTIVE EQUIPMENT:**

Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

**IX. SPECIAL PRECAUTIONS**

Operations with the potential for generating high concentrations of airborne particulate should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

**OTHER COMMENTS:**

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** individuals with chronic respiratory disorders (i.e.: asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure.

This information is taken from sources or based upon data believed to be reliable; however, Wheatland Tube Company makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.

**WHEATLAND TUBE COMPANY  
MATERIAL SAFETY DATA SHEET**

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**ADDENDUM 1**

In compliance with U.S. Environmental Protection Agency regulations that became effective on January 1, 1989, this addendum is to inform you that the products covered by our Material Safety Data Sheet #268 contains one or more of the below listed chemicals that are subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

Manganese      Zinc      Phosphorus

Refer to Section 2 of the Material Safety Data Sheet for the CAS numbers and percent by weight for each of the chemicals listed.

The above referenced law requires certain manufacturers to report annual emissions of specified toxic chemicals and chemical categories. If you are unsure if you must report or, if you require more information, call the EPA Emergency Planning and Community Right-To-Know Hotline (800)535-0202 or (202)479-2449 (in Washington, DC or Alaska).

**WHEATLAND TUBE COMPANY  
MATERIAL SAFETY DATA SHEET**

**ADDENDUM 2**

**RUST PREVENTATIVES AND PROTECTIVE COATINGS**

<b>Division</b>	<b>Product</b>	<b>Source</b>
W	G4894-A Tinted Pipe Coating Paint	Ranbar Technology Inc, 1114 Wm. Flinn Highway Glenshaw, PA 15116 412-486-1111 1-800-486-1113
W	Sodium Bichromate	Occidental Chemical Corp. Occidental Tower PO Box 809050 Dallas, TX 75380 800-752-5151
W	Zinc Metal- Slabs	Noranda, Inc. 181 Bay Street, Suite 4100 P.O. Box 755 Toronto, Ontario Canada MSJ 2T3 416-982-7111
W	Zinc Metal- Slabs	Cominco 120 Adelaide Street West Suite 1700 Toronto, Ontario, Canada M5H 1T1 416-943-6263
W	Zinc Metal- Slabs	Allied Deal 180 Centennial Avenue Piscataway, NJ 08854 732-885-5991
W, C	Zinc Metal- Wire	Plat Brothers P.O. Box 1030 Waterbury, OH 06721 203-753-4191

**WHEATLAND TUBE COMPANY  
MATERIAL SAFETY DATA SHEET**

**ADDENDUM 2**

**RUST PREVENTATIVES AND PROTECTIVE COATINGS**

<b>Division</b>	<b>Product</b>	<b>Source</b>
W	Zinc Metal Slabs	Zinc Corp. of America 300 Frankfort Road Monica, PA 15061 412-773-2216
W, LR  W  W	L4042A Pipe Coating Varnish  L3843 Tinted Quick Dry Lead Free Varnish L 4137 Silver Thread Paint	Mahoning Paint Corp. PO Box 1282 Youngstown, OH 44501 216-744-2139
W	3M Scotchkote Fusion Bonded Epoxy Coating Brand 206N	3M Corporation 3M Austin Center 6801 River place Blvd Austin , Texas 78726-9000 800-722-6721
W	Future Fluids 2084	K.J. Dobay, Inc. 2021 Buckingham Drive Mars, PA 16046 724-779-1888
W	Polar RP 1135	Polar, Inc. 7031 corporate Way Dayton, Oh 45459 937 436 0099
W	TG Thread Compound	Sefco, Inc. 14813 Venture Drive Dallas, TX 75234 214-247-7418
W	Ease-On Pipe Joint Lubrication	Seacord Corporation 17 <sup>th</sup> & Mickle Streets Camden, NJ 08105 609-966-0440
W	Ferrocoat 112 DT	Quaker Chemical Corporation Elm and Lee Street Conshohocken, PA 19428 215-828-4250



**WHEATLAND TUBE COMPANY  
MATERIAL SAFETY DATA SHEET**

**ADDENDUM 2**

**RUST PREVENTATIVES AND PROTECTIVE COATINGS**

Division	Product	Source
C	Zinc Metal- Slabs	Big River Zinc Route #3 Monsanto Avenue Sauget, IL 62201 618-274-5000
C, LR	Oakite Okemcoat F2	Oakite Products Inc. 50 Valley Road Berkeley Heights, NJ 07922 908-464-6900 1-800-526-4473
W C LR C, LR LR LR LR	Z888795 Clear OD Pipe Ctg KKC-00299 KXC-0048 AXA0442 WLA0086 KKC-0205 64 000WB-2	Valspar Corporation 1101 3 <sup>rd</sup> Street South Minneapolis, MN 55415 612-375-7371
C C C, LR C, LR C, LR LR	ID-103 ID-105 ID-109 ID-105 (modified-Al). OD-236 ID-111 Silver End Spray	Crest Industries, Ltd. 1066 Industry Road New Lenox, IL 60451 815-485-2138
LR	Zinc Metal –Slabs	Savage Zinc P.O. Box 1104 Clarksville, Tennessee 37041-1104 931-552-4200
LR	Water Base A.D. Thread Coating	Dura Coat Products 10938 Beech Ave. Fontana, CA 92337 909-823-2499
LR	Water Base A.D. Thread Coating	Dura Coat Products 10938 Beech Ave. Fontana, CA 92337 909-823-2499
C, LR C, LR C	W-1734 W-1735 V-1861-01	Thermoclad Corp 361 West 11 Street Erie, PA 16501 814-456-1243

LR	Rust Veto 343	Houghton International, Inc. P.O. Box 930 Valley forge, PA 19482 215-666-4105
W	Zinc Metal Slabs	Falconbridge Limited Kidds Creek Division Timmins, Ontario, Canada

# MUELLER BRASS Co.

## MATERIAL SAFETY DATA SHEET

**IDENTITY (As Used on Label and List)** **COPPER**

<b>SECTION I</b>	
Manufacture's Name <b>Mueller Brass Co.</b>	Emergency Telephone Number <b>(810) 987-7770</b>
Address (Number, Street, City, State and Zip Code) <b>2199 Lapeer Avenue</b>	Telephone Number for Information <b>(810) 987-7770</b>
<b>Port Huron, Michigan 48060</b>	Revision Date <b>3/1/03</b>
	Reviewed By <b>David Tipton</b>

**SECTION II — Hazardous Ingredients/Identity Information**

Hazardous Components (Specific Chemical Identity/Common Name(s))	OSHA PEL	ACGIH TWA	%
*Copper (7440-50-8) (Dust & Mist)	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	99.9 - min
*Copper (7440-50-8) (Fume)	0.1mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	99.9 - min

*\*Denotes a toxic chemical or chemicals subject to reporting requirements of Section 313 Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR Part 372.*

**SECTION III — Physical/Chemical Characteristics**

Boiling Point	N/A	Specific Gravity (H <sub>2</sub> O=1)	8.94
Vapor Pressure (mm Hg.)	N/A	Melting Point	1,981° F
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water	NIL		
Appearance and Odor	Reddish - brown metal/no odor		

**SECTION IV — Fire and Explosion Hazard Data**

Flash Point (Method Used)	N/A	Flammable Limits	N/A	LEL	N/A	UEL	N/A
Extinguishing Media	N/A						
Special Fire Fighting Procedures	N/A						
Unusual Fire and Explosion Hazards	Water on hot material may cause splattering which could result in scalding.						

**SECTION V — Reactivity Data**

Stability	Unstable		Conditions to Avoid	N/A
	Stable	X		

Incompatibility (Materials to Avoid) **Acids, oxidizers, ammonia.**

Hazardous Decomposition or Byproducts **Exposure to Nitric Acid will cause generation of NOx fumes.**

Hazardous Polymerization	May Occur		Conditions to Avoid	N/A
	Will Not Occur	X		

**SECTION VI — Precautions for Safe Handling and Use**

Steps to Be Taken in Case Material is Released or Spilled  
**Prevent exposure to acids, oxidizers, and ammonia products.**

Waste Disposal Method  
**In accordance with Federal, State and local regulations.**

Precautions to Be Taken in Handling and Storing  
**Material may be heavy, prevent spillage from high storage areas.**

Other Precautions  
**N/A**

**SECTION VII — Control Measures**

Respiratory Protection (Specify Type)  
**May be applicable if cutting, welding, brazing, grinding, etc. depending on exhaust.**

Ventilation	Local Exhaust	During grinding, welding, etc.	Special	N/A
	Mechanical (General)	N/A	Other	N/A

Protective Gloves **Recommended when handling metal.** Eye Protection **Goggles if cutting, welding, brazing, grinding, etc.**

Other Protective Clothing or Equipment  
**Not applicable as shipped but protective clothing is determined by processing activity, i.e. casting, machining, etc.**

Work/Hygienic/Maintenance Practices  
**Wash with soap and water after handling.**

**SECTION VIII — Health Hazard Data (See page three of MSDS)**

Route(s) of Entry: Inhalation? Skin? Ingestion?

Health Hazards (Acute and Chronic)  
**See page three of MSDS**

Carcinogenicity: NTP? NO IARC Monographs? NO OSHA Regulated? NO

Signs and Symptoms of Exposure  
**See page three of MSDS**

Medical Conditions Generally Aggravated by Exposure **Anyone with pre-existing respiratory disease should avoid overexposure to dust, fumes, and respiratory irritants.**

Emergency and First Aid Procedures  
**If exposed to excessive levels of metal dust or fumes, remove the victim to fresh air. Eyes and skin - flush with water for at least 15 minutes and seek medical assistance immediately.**

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**SECTION VIII — HEALTH HAZARD DATA**

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**HEALTH HAZARDS (SHORT TERM AND LONG TERM)**

**COPPER:** Inhalation of copper fumes or dust may cause metal fume fever and damage to nasal membranes. The skin and hair may turn green in severe cases. Skin and eye irritation may occur. Skin sensitization may occur. Chronic exposure may cause Wilson's disease which is characterized by damage to the blood cells, brain, kidneys, liver, and pancreas. Copper fragments left in the cornea may cause cataracts. Copper fragments that penetrate the eye may cause irreversible eye damage if not removed immediately.

**SIGNS AND SYMPTOMS OF EXPOSURE**

**COPPER:** Metal fume fever is characterized by a dry irritated throat, chills, fever, and elevated white blood cell count, and general flu-like symptoms. Skin, eye, and nasal irritation and skin sensitization are characterized by pain, swelling, and reddening of the affected tissue. Wilson's disease is characterized by weakness, anemia, abdominal pain, and yellowing of the skin or jaundice.



IPS WELD-ON		MATERIAL SAFETY DATA SHEET		Date Revised: FEB 2001 Supersedes: FEB 1999					
Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. IPS Corporation urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on this sheet.									
<b>SECTION I</b>									
<b>MANUFACTURER'S NAME</b> IPS Corporation <b>ADDRESS</b> 17109 S. Main St., P.O. Box 379, Gardena, CA. 90248			<b>Transportation Emergencies:</b> CHEMTREC: (800) 424-9300 or 3 E COMPANY (800) 451-8346 <b>Medical Emergencies:</b> 3 E COMPANY (24 Hour No.) (800) 451-8346 <b>Business: (310) 898-3300</b>						
<b>CHEMICAL NAME and FAMILY</b> Solvent Cement for CPVC Plastic Pipe Mixture of CPVC Resin and Organic Solvents			<b>TRADE NAME:</b> WELD-ON CORZAN X-10 for CPVC Plastic Pipe <b>FORMULA:</b> Proprietary						
<b>SECTION II - HAZARDOUS INGREDIENTS</b>									
None of the ingredients below are listed as carcinogens by IARC, NTP or OSHA									
	<b>CAS#</b>	<b>APPROX %</b>	<b>ACGIH-TLV</b>	<b>ACGIH-STEL</b>	<b>OSHA-PEL</b>	<b>OSHA-STEL</b>	<b>DUPONT</b>		
							<b>(A) AEL</b>	<b>(B) STEL</b>	
Chlorinated Polyvinyl Chloride Resin (CPVC)	NON/HAZ		N/A		N/A				
Tetrahydrofuran (THF)**	109-99-9	50-70	200 PPM	250 PPM	200 PPM	250 PPM	25 PPM	75 PPM	
Methyl Ethyl Ketone (MEK)	78-93-3	9*	200 PPM	300 PPM	200 PPM	300 PPM			
Cyclohexanone	108-94-1	5-15	25 PPM Skin			25 PPM Skin			
All of the constituents of Weld-On adhesive products are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.									
* Title III Section 313 Supplier Notification: This product contains toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR372. This information must be included in all MSDS's that are copied and distributed for this material.									
(A) Dupont's Acceptable Exposure Limits (AEL) guidelines for 8 hour and 12 hour TWA, (B) Dupont's recommended STEL for 15 minute TWA.									
**Information found in a report from the National Toxicology Program (NTP) on an inhalation study in rats and mice suggests that Tetrahydrofuran (THF) can cause tumors in animals. In the study the rats and mice were exposed to THF vapor levels up to 1800 PPM for two years (their lifetime), 6 hours/day, 5 days/week. Test results showed evidence of liver tumors in female mice and kidney tumors in male rats. No evidence of tumors was seen in female rats and male mice. There is no data linking Tetrahydrofuran exposure with cancer in humans.									
<b>BULK SHIPPING INFORMATION / CONTAINERS LARGER THAN ONE LITER</b>			<b>SPECIAL HAZARD DESIGNATIONS</b>						
DOT Shipping Name: Adhesive			<b>HMIS</b> <b>NFPA</b> <b>HAZARD RATING</b>						
DOT Hazard Class: 3			HEALTH: 2      2      0 - MINIMAL						
Identification Number: UN 1133			FLAMMABILITY: 3      3      1 - SLIGHT						
Packaging Group: II			REACTIVITY: 0      1      2 - MODERATE						
Label Required: Flammable Liquid			PROTECTIVE      3 - SERIOUS						
			EQUIPMENT: H      4 - SEVERE						
<b>SHIPPING INFORMATION FOR CONTAINERS LESS THAN ONE LITER</b>			H = Eye, Hand/Skin, Respiratory Protection and Impermeable Apron						
DOT Shipping Name: Consumer Commodity									
DOT Hazard Class: ORM-D									
<b>SECTION III - PHYSICAL DATA</b>									
<b>APPEARANCE</b> Dark blue, medium syrupy liquid		<b>ODOR</b> Ethereal		<b>BOILING POINT (°F/°C)</b> 151°F (67°C) Based on first boiling component: THF					
<b>SPECIFIC GRAVITY @ 73°F ± 3.6° (23°C ± 2°)</b> Typical 0.968 ± 0.040		<b>VAPOR PRESSURE (mm Hg.)</b> 143 mm Hg. based on first boiling component, THF @ 68°F (20°C)		<b>PERCENT VOLATILE BY VOLUME (%)</b> Approx: 80 - 90 %					
<b>VAPOR DENSITY (Air = 1)</b> 2.49		<b>EVAPORATION RATE (BUAC = 1)</b> > 1.0		<b>SOLUBILITY IN WATER</b> Solvent portion completely soluble in water. Resin portion separates out.					
VOC STATEMENT: VOC as manufactured: 850 Grams/Liter (g/l). Maximum VOC emission when applied & tested per SCAQMD Rule 1168, Test Method 316A: 580 g/l.									
<b>SECTION IV - FIRE AND EXPLOSION HAZARD DATA</b>									
<b>FLASH POINT</b> -4°F (-20°C) T.C.C. Based on THF			<b>FLAMMABLE LIMITS</b> (PERCENT BY VOLUME)			<b>LEL</b>		<b>UEL</b>	
						2.0		11.8	
<b>FIRE EXTINGUISHING MEDIA</b> Ansul "Purple K" potassium bicarbonate dry chemical, any appropriately sized ABC dry chemical, carbon dioxide or foam extinguisher can be used for small fires. Use of a water fog by trained personnel can extinguish small/large fires.									
<b>SPECIAL FIRE FIGHTING PROCEDURES</b> Evacuate enclosed areas. Stay upwind. Close quarters or confined spaces require self-contained breathing apparatus, positive pressure hose masks or airline masks. Use of a water fog by trained personnel can extinguish small/large fires and avoid water flow or water streams/spray distributing burning material or contaminated water over a large area or into sewers or storm drains. Use water spray to cool containers, to flush spills from source of ignition and to disperse vapors.									
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS</b> Fire hazard because of low flash point and high volatility. Vapors are heavier than air and may travel to source(s) of ignition at or near ground or lower level(s) and flash back.									

## SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES  
OF ENTRY:

     X      Inhalation      X      Skin Contact      Eye Contact      Ingestion

EFFECT OF OVEREXPOSURE

**ACUTE:**

Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.  
Skin Contact: Skin irritant. Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.  
Skin Absorption: Prolonged or widespread exposure may result in the absorption of harmful amounts of material.  
Eye Contact: Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid. Vapors slightly uncomfortable.  
Ingestion: Moderately toxic. May cause nausea, vomiting, diarrhea. May cause mental sluggishness.  
**CHRONIC:** Symptoms of respiratory tract irritation and damage to respiratory epithelium were reported in rats exposed to 5000 ppm THF for 90 days. Elevation of SGPT suggests a disturbance in liver function. The NOEL was reported to be 200 ppm.

REPRODUCTIVE EFFECTS	TERATOGENICITY	MUTAGENICITY	EMBRYOTOXICITY	SENSITIZATION TO PRODUCT	SYNERGISTIC PRODUCTS
N. AP.	N. AP.	N. AP.	N. AP.	N. AP.	N. AV.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing diseases of the eyes, skin or respiratory system may have increased susceptibility to the toxicity of excessive exposures.

EMERGENCY AND FIRST AID PROCEDURES

Inhalation: If overcome by vapors, remove to fresh air and if breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Call physician.  
Eye Contact: Flush eyes with plenty of water for 15 minutes and call a physician.  
Skin Contact: Remove contaminated clothing and shoes. Wash skin with plenty of soap and water for at least 15 minutes. If irritation develops, get medical attention.  
Ingestion: Give 1 or 2 glasses of water or milk. Do not induce vomiting. Call physician or poison control center immediately.

## SECTION VI - REACTIVITY

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Keep away from heat, sparks, open flame and other sources of ignition.

INCOMPATIBILITY

(MATERIALS TO AVOID) Caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.

HAZARDOUS DECOMPOSITION PRODUCTS

When forced to burn, this product gives out carbon monoxide, carbon dioxide, hydrogen chloride and smoke.

HAZARDOUS	MAY OCCUR		CONDITIONS TO AVOID
POLYMERIZATION	WILL NOT OCCUR	X	Keep away from heat, sparks, open flame and other sources of ignition.

## SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Eliminate all ignition sources. Avoid breathing of vapors. Keep liquid out of eyes. Flush with large amount of water. Contain liquid with sand or earth. Absorb with sand or nonflammable absorbent material and transfer into steel drums for recovery or disposal. Prevent liquid from entering drains.

WASTE DISPOSAL METHOD

Follow local, State and Federal regulations. Consult disposal expert. Can be disposed of by incineration. Excessive quantities should not be permitted to enter drains. Empty containers should be air dried before disposing. Hazardous Waste Code: 214.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)

Atmospheric levels should be maintained below established exposure limits contained in Section II. If airborne concentrations exceed those limits, use of a NIOSH approved organic vapor cartridge respirator with full face-piece is recommended. The effectiveness of an air purifying respirator is limited. Use it only for a single short-term exposure. For emergency and other conditions where short-term exposure guidelines may be exceeded, use an approved positive pressure self-contained breathing apparatus.

VENTILATION

Use only with adequate ventilation. Provide sufficient ventilation in volume and pattern to keep contaminants below applicable exposure limits set forth in Section II. Use only explosion proof ventilation equipment.

PROTECTIVE GLOVES

PVA coated

EYE PROTECTION

Splashproof chemical goggles

OTHER PROTECTIVE EQUIPMENT AND HYGIENIC PRACTICES

Impervious apron and a source of running water to flush or wash the eyes and skin in case of contact.

## SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in the shade between 40°F - 90°F (5°C - 32.5°C). Keep away from heat, sparks, open flame and other sources of ignition. Avoid prolonged breathing of vapor. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Train employees on all special handling procedures before they work with this product.

OTHER PRECAUTIONS

Follow all precautionary information given on container label, product bulletins and our solvent cementing literature. All material handling equipment should be electrically grounded.

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.



# Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

## U.S. Department of Labor

Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072



IDENTITY (As Used on Label and List)

**CPVC Pipe & Fittings**

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

### Section I

Manufacturer's Name

**Charlotte Pipe and Foundry Co., Plastics Division**

Emergency Telephone Number

**800-424-9300 (CHEMTREC)**

Address (Number, Street, City, State, and ZIP Code)

**P.O. Box 1339**

Telephone Number for Information

**704-372-3650**

**4210 Old Charlotte Hwy.**

Date Prepared

**March, 2000**

**Monroe, N.C. 28111-1339**

Signature of Preparer (optional)

### Section II - Hazard Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
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**This product is not known to contain a substance subject to section 313 of Title III S.A.R.A. and 40CFR372 at or above De Minimus amounts.**

**This product is a solid material with all additives being physically bound in a matrix during the manufacturing process.**

**Mixture of chlorinated poly(chloroethene) resin and process/performance additives.**

### Section III - Physical/Chemical Characteristics

Boiling Point <b>Not Applicable</b>	<b>N/A</b>	Specific Gravity (H <sub>2</sub> O = 1)	<b>1.48-1.56</b>
Vapor Pressure (mm Hg.) <b>Not Applicable</b>	<b>N/A</b>	Melting Point <b>Processing Temperature</b>	<b>410° F</b>
Vapor Density (AIR = 1) <b>Not Applicable</b>	<b>N/A</b>	Evaporation Rate (Butyl Acetate = 1) <b>Not Applicable</b>	<b>N/A</b>
Solubility in Water <b>Insoluble</b>			
Appearance and Odor <b>Either light gray solid or light tan solid practically odorless.</b>			

### Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) <b>~900°F (482°C)</b>	Flammable Limits <b>Not Applicable</b>	LEL <b>N/A</b>	UEL <b>N/A</b>
Extinguishing Media <b>Water, ABC dry chemical, AFFF, and protein type air foams</b>			
Special Fire Fighting Procedures <b>Wear self contained breathing apparatus with full face piece and operate in pressure-demand mode or positive-pressure mode. CPVC is a combustibile thermoplastic material.</b>			
Unusual Fire and Explosion Hazards <b>Very irritating smoke from burning CPVC. Run off water from firefighting may have corrosive effects.</b>			

**Evolves carbon monoxide, hydrogen chloride, and other toxic gases when burned.**

(Reproduce locally)

## Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid <b>Not Applicable</b>
	Stable	<b>X</b>	

Incompatibility (*Materials to Avoid*)

**Avoid overheating**

Hazardous Decomposition or Byproducts

**Emits CO, CO<sub>2</sub>, Hydrogen chloride, organotins, and various hydrocarbons with combustion.**

Hazardous Polymerization	May Occur		Conditions to Avoid <b>Not Applicable</b>
	Will Not Occur	<b>X</b>	

## Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation? <b>No</b>	Skin? <b>No</b>	Ingestion? <b>No applicable information found.</b>
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Health Hazards (*Acute and Chronic*)

**None known or expected.**

Carcinogenicity:	NTP? <b>Not Applicable</b>	IARC Monographs?	OSHA Regulated?
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Signs and Symptoms of Exposure

**None expected during normal handling.**

Medical Conditions Generally Aggravated by Exposure

**Not Applicable**

Emergency and First Aid Procedures

**Not Applicable**

## Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

**Not Applicable**

Waste Disposal Method

**Disposal of waste in accordance with federal, state and local regulations. This product is not defined as hazardous by provisions of the RCRA, 40CFR261.**

Precautions to Be taken in Handling and Storing

**Static electric buildup may produce spark sufficient to ignite vapors or flammable liquids.**

Other Precautions

**Sprinklered warehouses are recommended.**

## Section VIII - Control Measures

Respiratory Protection (*Specify Type*)

**None needed during normal handling.**

Ventilation	Local Exhaust <b>Not Applicable</b>	Special <b>Not Applicable</b>
	Mechanical ( <i>General</i> ) <b>Not Applicable</b>	Other <b>Not Applicable</b>

Protective Gloves <b>None.</b>	Eye Protection <b>None.</b>
-----------------------------------	--------------------------------

Other Protective Clothing or Equipment  
**None.**

Work/Hygienic Practices  
**None.**

# Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

## U.S. Department of Labor

Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072



**IDENTITY** (As Used on Label and List)

### PVC Pipe and Fittings

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

#### Section I

Manufacturer's Name

**Charlotte Pipe and Foundry Co., Plastics Division**

Emergency Telephone Number

**(800) 424-9300 (CHEMTREC)**

Address (Number, Street, City, State, and ZIP Code)

**P.O. Box 1339**

Telephone Number for Information

**(704) 372-3650**

**4210 Old Charlotte Hwy.**

Date Prepared

**August, 2006**

**Monroe, N.C. 28111-1339**

Signature of Preparer (optional)

#### Section II - Hazard Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
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**Less than 3.2 parts per million (ppm) of residual vinyl chloride monomer (rvcm)**

#### Section III - Physical/Chemical Characteristics

Boiling Point

**Not Applicable**

**Solid**

Specific Gravity (H<sub>2</sub>O = 1)

**1.42 - 1.56**

Vapor Pressure (mm Hg.)

**Not Applicable**

**Solid**

Melting Point

**Processing Temperature**

**390°F**

Vapor Density (AIR = 1)

**Not Applicable**

**Solid**

Evaporation Rate  
(Butyl Acetate = 1)

**Solid**

Solubility in Water

**Not Applicable**

Appearance and Odor

**White, Grey or Green Solid - None**

#### Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)

**Flash Ignition Temp (ASTM D 1929) ~735°F**

Flammable Limits

**Not Applicable**

LEL

**N/A**

UEL

**N/A**

Extinguishing Media

**Water spray, CO<sub>2</sub> Dry Chemical**

Special Fire Fighting Procedures

**In confined spaces, self-contained breathing apparatus should be worn.**

**PVC is a combustible thermoplastic material.**

Unusual Fire and Explosion Hazards

**Evolves carbon monoxide, hydrogen chloride, and other toxic gases when burned.**

**Run off water from firefighting may have corrosive effects.**

(Reproduce locally)

## Section V - Reactivity Data

Stability <b>Not Applicable</b>	Unstable		Conditions to Avoid <b>Not Applicable</b>
	Stable		

Incompatibility (*Materials to Avoid*)

**Not Applicable**

Hazardous Decomposition or Byproducts

**Emits CO, CO<sub>2</sub>, hydrogen chloride, organotins and various hydrocarbons with combustion.**

Hazardous Polymerization <b>Not Applicable</b>	May Occur		Conditions to Avoid <b>Not Applicable</b>
	Will Not Occur		

## Section VI - Health Hazard Data

Route(s) of Entry: <b>Not Applicable</b>	Inhalation?	Skin?	Ingestion?
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Health Hazards (*Acute and Chronic*)

**Not Applicable**

Carcinogenicity: <b>Not Applicable</b>	NTP?	IARC Monographs?	OSHA Regulated?
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Signs and Symptoms of Exposure

**Combustion products will cause eye, nose and throat irritation.**

Medical Conditions Generally Aggravated by Exposure

**Prolonged exposure to combustion products may cause bronc spasm in individuals with bronchial asthma.**

Emergency and First Aid Procedures

**Remove individual from fire area. Call physician, provide protection before re-entry.**

**If overexposure occurs, leave fire area. If irritation persists, wash with water.**

## Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

**Not Applicable**

Waste Disposal Method

**Can be sent to sanitary landfill.**

Precautions to Be taken in Handling and Storing

**Sprinklered warehouses recommended.**

Other Precautions

**None.**

## Section VIII - Control Measures

Respiratory Protection (*Specify Type*)

**Not Applicable**

Ventilation	Local Exhaust <b>Not Applicable</b>	Special <b>Not Applicable</b>
	Mechanical ( <i>General</i> ) <b>Not Applicable</b>	Other <b>Not Applicable</b>

Protective Gloves <b>None.</b>	Eye Protection <b>None.</b>
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Other Protective Clothing or Equipment <b>None.</b>
--

Work/Hygienic Practices <b>None.</b>
---



**YOU ARE HERE:** [Home](#) > [Weldbend Catalog](#) > [Technical Data](#) > [Material Safety Data \(page 1 of 3\)](#)

## Material Safety Data

### Product Identification:

**Manufacturer's Name:** Weldbend Corporation  
**Address:** 6600 South Harlem Avenue  
 Argo, Illinois 60501-1930  
**Telephone Number:** (708) 594-1700  
**Emergency Number:** (800) 424-9300 CHEMTREC  
**Chemical Name & Synonyms:** Weld Fittings & Flanges  
**Chemical Family:** Carbon Steel Grade WPB  
**Formula:** Not Applicable

### Product Description & Hazardous Ingredients / Identity Information:

ALLOYING ELEMENTS	CAS NO.
Iron (Fe)	7439-89-6
*Manganese (Ma)	7439-96-5
*Carbon (C)	7440-44-0
Aluminum (Al)	7429-90-5
Chromium (Cr)	7440-47-3
Copper (Cu)	7440-50-8
Molybdenum (Mo)	7439-98-7
Nickel (Ni)	7440-02-0
*Phosphorus (P)	7723-14-0
*Silicon (Si)	7440-21-3
*Sulfur (S)	7704-34-9
Boron (B)	7440-42-8
Bismuth (Bi)	7440-69-9
Tellurium (Te)	13494-80-9
Lead (Pb)	7439-92-1
Vanadium (V)	7440-62-2
Titanium (Ti)	7440-32-6
Zinc Coating (Zn)	1314-13-2
Zinc (Zn)	7440-66-6
Cobalt (Co)	7440-48-4
Tungsten (W)	7440-33-7
Tin (Sn)	7440-31-5

\*Basic Chemistry carbon steel ASTM requirement

### Physical Data:

Melting Point F (C): Greater than 2800 (1540)  
 Vapor Pressure: Not Applicable

Vapor Density (Air =1 ): Not Applicable  
Solubility in Water: Negligible  
Specific Gravity (H<sub>2</sub>O = 1): Greater than 7  
% Volatile by Volume (%): Not Applicable  
Evaporation Rate: Not Applicable

[www.weldbend.com](http://www.weldbend.com)

**Next >**

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# MSDS - Material Safety Data Sheet

**Product Name: LIQUID BOILER SEAL**

MSDS No.: B232

**I. Basic Information:**

**Manufacturer:** RADIATOR SPECIALTY COMPANY  
**Address:** 600 RADIATOR ROAD  
**City, ST Zip:** INDIAN TRAIL, NC 28079  
**Emergency Contact:** Rocky Mountain Poison Control Center  
**Emergency Telephone Number:** 303-623-5716  
**Contact:** Robert Geer  
**Information Telephone Number:** 704-684-1811



**Last Update:** 06/09/2005      **Expiration Date:**  
**Chemical State:**     Liquid       Gas       Solid  
**Chemical Type:**     Pure       Mixture

2	Health
0	Flammability
0	Reactivity
B	Pers. Protection

**II. Ingredients:**

Trade Secret

CAS No.	Chemical Name	% Range	EHS		IARC		SARA		OSHA PEL	ACGIH TLV	Other Limits
			NTP		SUB Z	313					
1344-09-8	Sodium Silicate	40-60						N/D	N/D		

**III. Hazardous Identification:**

**Hazard Category:**  
 Acute       Chronic       Fire       Pressure       Reactive

**Hazardous Identification Information:**  
 Caution: Harmful if swallowed. Eye and Skin irritant. .

**IV. First Aid Measures:**

**Route(s) of Entry:**  
 Absorption, Eye, Inhalation, and Ingestion.

**Health Hazards (Acute and Chronic):**  
 May be irritating to the respiratory tract, skin, eyes, and gastrointestinal tract. May cause permanent eye damage.

**Signs and Symptoms:**  
 Eye Contact: Eye irritant. Direct spray of vapors may be irritating or harmful to eyes.  
 Skin Contact: Skin irritant. Product may cause irritation due to defatting of skin.  
 Inhalation: High concentration of vapors may irritate nose and throat and cause headaches and nausea.  
 Ingestion: Can cause irritation, gastric disturbances, and nausea..

**Medical Conditions Generally Aggravated by Exposure:**  
 None known

**Emergency and First Aid Procedures:**

# MSDS - Material Safety Data Sheet

**Product Name: LIQUID BOILER SEAL**

**MSDS No.: B232**

Eye Contact: Flush eyes with water for 15 minutes while lifting upper and lower eyelid and get prompt medical attention.

Skin Contact: Wash with soap and water. If irritation persists, get prompt medical attention.

Inhalation: Move to fresh air. If breathing becomes difficult, get prompt medical attention.

Ingestion: Do not induce vomiting. Call Poison Control Center, physician, or hospital emergency room immediately.

**Other Health Warnings:**

None known

## V. Fire Fighting Measures:

**Flash Point:** N/A

**Lower Explosive Limit:** N/A

**Upper Explosive Limit:** N/A

**F.P. Method:**

**Fire Extinguishing Media:** Water Fog, Foam, Carbon Dioxide, Dry Chemical

**Special Fire Fighting Procedures:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

**Unusual Fire and Explosion:**

None Known

## VI. Accidental Release Measures:

**Steps to be Taken in Case Material is Released or Spilled:**

Use appropriate protective equipment. Contain spill and then absorb spill with inert material or rags and scoop into a chemical waste container. Neutralize remaining traces of material and flush with water followed by liberal covering with sodium bicarbonate. All clean-up material should be removed and placed in approved containers for disposal. Rinse water may be disposed of down a sanitary sewer system if authorized by the local municipality.

## VII. Handling and Storage:

**Precautions to be Taken:**

Use with adequate ventilation and proper protective equipment.

**Other Precautions:**

Keep container closed tightly when not in use. Store in a cool place away from acids and oxidizing agents.

## VIII. Exposure Controls/Personal Protection:

**Ventilation Requirements:**

See Section 2 for applicable exposure limits. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

For prolonged exposure to the material, wear safety glasses, gloves, and apron.



# MSDS - Material Safety Data Sheet

**Product Name: LIQUID BOILER SEAL**

MSDS No.: B232

## IX. Physical and Chemical Properties:

Boiling Point: 220 F

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): N/D

Vapor Pressure (mm Hg.): N/D

Specific Gravity (H<sub>2</sub>O = 1): 1.24000

Vapor Density (AIR = 1): N/D

Solubility In Water: Soluble

Appearance and Odor:

Other Information: pH: 11-12

Red viscous liquid with mild odor

## X. Stability and Reactivity:

Stability:

Stable

Incompatibility (Materials to Avoid):

Acids and metals. Acids will cause gelling and evolution of heat. Prolonged contact with aluminum may produce flammable hydrogen gas.

Decomposition/By Products:

Normal production of combustion: carbon dioxide, carbon monoxide, and smoke

Hazardous Polymerization:

Will not occur

## XI. Toxicological Information:

No data available.

## XII. Ecological Information:

No data available

## XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

## XIV. Transport Information:

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

## XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

## XVI. Other Information:

## *MSDS - Material Safety Data Sheet*

***Product Name: LIQUID BOILER SEAL***

***MSDS No.: B232***

Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

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**MSDS - Material Safety Data Sheet****Product Name: BOILER SEAL POWDER**

MSDS No.: B167

**I. Basic Information:**

Manufacturer: RADIATOR SPECIALTY COMPANY

Address: 600 RADIATOR ROAD

City, ST Zip: INDIAN TRAIL, NC 28079

Emergency Contact: Rocky Mountain Poison Control Center

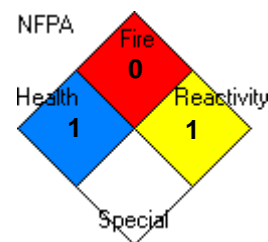
Emergency Telephone Number: 303-623-5716

Contact: Robert Geer

Information Telephone Number: 704-684-1811

Last Update: 03/21/2005

Expiration Date:

Chemical State:  Liquid  Gas  SolidChemical Type:  Pure  Mixture

1	Health
0	Flammability
1	Reactivity
F	Pers. Protection

**II. Ingredients:** Trade Secret

CAS No.	Chemical Name	% Range	EHS		IARC		SARA		OSHA PEL	ACGIH TLV	Other Limits
			NTP		SUB Z	313					
7429-90-5	Aluminum (fume or dust)	2-3					X		5 mg/m3	5 mg/m3	
	Organic fibers	85-95									
	Soap Powder	5-7									

**III. Hazardous Identification:**

Hazard Category:

 Acute  Chronic  Fire  Pressure  Reactive

Hazardous Identification Information:

Caution: Eye and Skin Irritant,

**IV. First Aid Measures:**

Route(s) of Entry:

Inhalation and Ingestion.

Health Hazards (Acute and Chronic):

See signs and symptoms below

Signs and Symptoms:

Eye Contact: Eye irritant

Skin Contact: Product may cause irritation to the skin upon prolonged contact

Inhalation: Dust will cause irritation.

Ingestion: Can cause nausea, vomiting, and diarrhea

Medical Conditions Generally Aggravated by Exposure:

None Known

# MSDS - Material Safety Data Sheet

**Product Name: BOILER SEAL POWDER**

**MSDS No.: B167**

**Emergency and First Aid Procedures:**

EYE CONTACT Flush with water for at least 15 minutes while lifting eyelids. Consult a physician if irritation persists..

SKIN CONTACT Wash with soap and water.

INHALATION Move to fresh air, provide ventilation to remove dust from area.

INGESTION Do not induce vomiting! Drink water. Consult a physician.

**Other Health Warnings:**

None Known

**V. Fire Fighting Measures:**

**Flash Point:** N/A

**Lower Explosive Limit:** N/A

**Upper Explosive Limit:** N/A

**F.P. Method:**

**Fire Extinguishing Media:** Water Fog, Foam, Carbon Dioxide, Dry Chemical

**Special Fire Fighting Procedures:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

**Unusual Fire and Explosion:**

Dust explosions are possible under optimum conditions

**VI. Accidental Release Measures:**

**Steps to be Taken in Case Material is Released or Spilled:**

Remove ignition sources, ventilate area, sweep up and transfer to waste drum.

**VII. Handling and Storage:**

**Precautions to be Taken:**

Store in cool and dry area.

**Other Precautions:**

**VIII. Exposure Controls/Personal Protection:**

**Ventilation Requirements:**

Maintain adequate ventilation. If TLV is exceeded, wear approved dust mask.

**Personal Protective Equipment:**

See Section 2 for applicable exposure limits. For prolonged exposure to the material, wear safety glasses, gloves, and apron.

# MSDS - Material Safety Data Sheet

**Product Name: BOILER SEAL POWDER**

MSDS No.: B167

## IX. Physical and Chemical Properties:

Boiling Point: N/A

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): N/A

Vapor Pressure (mm Hg.): N/A

Specific Gravity (H<sub>2</sub>O = 1):

Vapor Density (AIR = 1): N/A

Solubility In Water: Soluble

Appearance and Odor:

Silver colored dust-less powder with bland odor

Other Information:

## X. Stability and Reactivity:

Stability:

Stable

Incompatibility (Materials to Avoid):

Oxidizers

Decomposition/By Products:

Normal products of combustion

Hazardous Polymerization:

Will not occur

## XI. Toxicological Information:

Not Determined

## XII. Ecological Information:

Not Determined

## XIII. Disposal Considerations:

Dispose of in accordance with all applicable government laws and regulations.

## XIV. Transport Information:

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

## XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

## XVI. Other Information:

## ***MSDS - Material Safety Data Sheet***

***Product Name: BOILER SEAL POWDER***

***MSDS No.: B167***

KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

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**MSDS - Material Safety Data Sheet****Product Name: HEAT PRUF-GREASE**

MSDS No.: GRI

**I. Basic Information:****Manufacturer:** RADIATOR SPECIALTY COMPANY**Address:** 600 RADIATOR ROAD**City, ST Zip:** INDIAN TRAIL, NC 28079**Country:****Contact:** Robert Geer**Information Telephone Number:** 704-684--181 1**Emergency Contact:** Rocky Mountain Poision Control Center**Emergency Telephone Number:** 303-623-5716**Emergency Restrictions:****Product Name:** HEAT PRUF-GREASE**MSDS No.:** GR1**Issue Date:** 10/27/2008**Supersedes Date:** 05/12/2004**II. Hazards Identification:****EMERGENCY OVERVIEW**

Product is non-hazardous.

**OSHA Regulatory Status**

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product.

**Potential Health Effects****Route(s) of Entry:**

eyes, skin, and ingestion

**Health Hazards (Acute and Chronic):**

None known

**Signs and Symptoms:**

None known

**Medical Conditions Generally Aggravated by Exposure:**

None known

**Other Health Warnings:**

Vomiting and subsequent aspiration of the product into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

**Potential Environmental Effects**

Not Available

**III. Composition/Information on Ingredients:**

Chemical Name	CAS No.	% Range	Trade Secret
Mineral oil	Proprietary	60.0 - 100.0	

**IV. First Aid Measures:****Emergency and First Aid Procedures:**

Eye Contact: Flush eyes with water for 15 minutes while lifting upper and lower eyelid. Get prompt medical attention.

Skin Contact: Wash with soap and water. If irritation persists, get prompt medical attention.

Ingestion: Do not Induce Vomiting. Call Poison Control Center, physician, or hospital emergency room immediately.

**Note to Physicians:**

N/D

**MSDS - Material Safety Data Sheet****Product Name: HEAT PRUF-GREASE**

MSDS No.: GRI

**V. Fire Fighting Measures:****Suitable Extinguishing Media:**

Carbon dioxide, Foam, and Dry Chemical

**Unsuitable Extinguishing Media:**

Class A type extinguishers.

**Products of Combustion:**

None known

**Protection of Firefighters:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

**VI. Accidental Release Measures:****Personal Precautions:**

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

**Environmental Precautions:**

Material is thick and very viscous. Product run-off to sewers, streams, or other bodies of water will not occur.

**Methods for Containment:**

Material is thick and very viscous. Containment is not a problem with this product.

**Methods for Cleanup:**

Using a scoop, place contaminated material into an approved chemical waste container.

**Other Information:**

Use appropriate protective equipment.

**VII. Handling and Storage:****Handling Precautions:**

Avoid contact with eyes. Do not use or store near fire, sparks, or flame.

**Storage Precautions:**

Keep container tightly closed. Keep away from open flames, sparks, or other ignition sources. Keep away from strong oxidizers.

**VIII. Exposure Controls/Personal Protection:**

Chemical Name	OSHA PEL	ACGIH TLV	Other Limits
Mineral oil	Not Available	Not Available	5 mg/m3

**Engineering Controls:**

See Section above for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

Wear protective safety glasses.

**IX. Physical and Chemical Properties:****Boiling Point:** N/E**Boiling Range:** Not Available**Solubility In Water:** Negligible**Flash Point:** 450°C**Melting Point:** 284**Freezing Point:** Not Available**Evaporation Rate (Butyl Acetate = 1):** <0.01**Flash Point Method:** COC



# MSDS - Material Safety Data Sheet

## Product Name: HEAT PRUF-GREASE

MSDS No.: GRI

Odor Threshold: Not Available

Vapor Density (AIR = 1): > 1.0

pH Range: Not Available

Decomposition Temp: Not Available

Lower Explosive Limit: N/A

Specific Gravity (H2O = 1): Not Available

Other Information: N/D

Appearance and Odor: Semi-solid gel with petroleum odor

Vapor Pressure (mm Hg.): < 0.1

Partition Coefficient: Not Available

Auto-Ignition Temp: Not Available

Upper Explosive Limit: N/A

### X. Stability and Reactivity:

#### Stability:

Stable

#### Conditions to Avoid:

See Incompatible Materials below.

#### Incompatible Materials:

Keep away from strong oxidizers

#### Hazardous Decomposition Products:

Carbon Monoxide, Carbon Dioxide and undetermined organic compounds.

#### Possibility of Hazardous Reactions:

Will not occur.

### XI. Toxicological Information:

N/E

### XII. Ecological Information:

N/E

### XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

### XIV. Transport Information:

Shipping Name: Not Available

DOT Hazard Class: Not Available

UN/NA#: Not Available

DOT Subsidiary Hazard Class: Not Available

Packing Group: Not Available

#### Transportation Information:

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for all shipping purposes.

ICAO/IATA (US): Not regulated

International:

ICAO/IATA: Not regulated

IMDG: Not regulated

# MSDS - Material Safety Data Sheet

**Product Name: HEAT PRUF-GREASE**

MSDS No.: GRI

**XV. Regulatory Information:**

SARA 313 Reportable Chemicals:  
None

USA TSCA: All components of this material are either exempt or listed on the US TSCA Inventory.

State RTK Chemicals:  
None

**XVI. Other Information:**

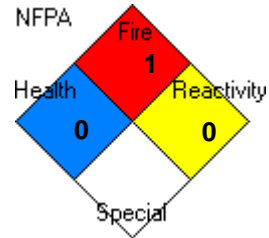
**Chemical State:**       Liquid       Gas       Solid

**Chemical Type:**       Pure       Mixture

**Hazard Category:**

Acute       Chronic       Fire

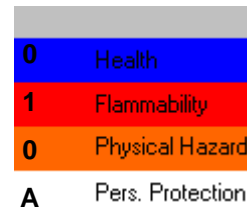
Pressure       Reactive



**Additional Manufacturer Warnings:**

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established  
N/D: Not Determined  
N/A: Not Applicable  
N/AV: Not Available



**Additional Product Information:**

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**MSDS - Material Safety Data Sheet****Product Name: LIQUID WRENCH SUPER PENETRANT (Liquid)**

MSDS No.: L116

**I. Basic Information:****Manufacturer:** RADIATOR SPECIALTY COMPANY**Address:** 600 RADIATOR ROAD**City, ST Zip:** INDIAN TRAIL, NC 28079**Country:****Contact:** Robert Geer**Information Telephone Number:** 704-684-1811**Emergency Contact:** Rocky Mountain Poision Control Center**Emergency Telephone Number:** 303-623-5716**Emergency Restrictions:****Product Name:** LIQUID WRENCH SUPER PENETRANT (Liquid)**MSDS No.:** L116**Issue Date:** 02/19/2008**Supersedes Date:** 04/13/2007**II. Hazards Identification:****EMERGENCY OVERVIEW**

Danger: Harmful or fatal if swallowed. Eye and skin irritant.

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Potential Health Effects****Route(s) of Entry:**

Absorption, Inhalation, and Ingestion.

**Health Hazards (Acute and Chronic):**

See Signs and Symptoms below.

**Signs and Symptoms:**

Eye Contact: Irritant. Prolonged contact may cause conjunctivitis.

Skin Contact: Irritant. Defatting of tissue, dermatitis may occur.

Inhalation: Irritant to mucous membranes. Repeated exposure may cause narcosis, dizziness, respiratory or lung irritation.

Ingestion: HARMFUL OR FATAL IF SWALLOWED.

**Medical Conditions Generally Aggravated by Exposure:**

Unknown

**Other Health Warnings:**

Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

**Potential Environmental Effects**

Not Available

**III. Composition/Information on Ingredients:**

Chemical Name	CAS No.	% Range	Trade Secret
2-Butoxyethanol	111-76-2	3.0 - 7.0	
Naphthenic Petroleum Distillate	64742-52-5	7.0 - 13.0	
Natural Methyl Ester	67762-38-3	40.0 - 60.0	
Refined Soybean Oil	8001-22-7	15.0 - 40.0	

**IV. First Aid Measures:****Emergency and First Aid Procedures:**

# MSDS - Material Safety Data Sheet

## Product Name: *LIQUID WRENCH SUPER PENETRANT (Liquid)*

### MSDS No.: L116

Eye Contact: Flush eyes with clean water for 15 minutes while lifting eyelids. Get prompt medical attention.

Skin Contact: Wash with soap and water thoroughly. If adverse effects persist, get prompt medical attention. Launder contaminated clothing before reuse.

Inhalation: Remove to fresh air. If breathing becomes difficult give oxygen and get prompt medical attention. If breathing stops, give artificial respiration and get prompt medical attention.

Ingestion: DO NOT INDUCE VOMITING! Call Poison Control Center, physician, or hospital emergency room immediately. Aspiration of vomitus into the lungs can cause pneumonitis, which can be fatal.

#### Note to Physicians:

N/E

### **V. Fire Fighting Measures:**

#### Suitable Extinguishing Media:

Water Fog, Foam, Carbon Dioxide, Dry Chemical

#### Unsuitable Extinguishing Media:

Do not use forced water stream as this could cause the fire to spread.

#### Products of Combustion:

Normal products of combustion, smoke, carbon dioxide, carbon monoxide, and sulfur trioxides.

#### Protection of Firefighters:

Wear self-contained positive pressure breathing apparatus and protective clothes. Use shield to protect from rupturing and venting containers. At elevated temperatures containers may vent, rupture or burst, even violently

### **VI. Accidental Release Measures:**

#### Personal Precautions:

Eliminate all ignition sources. Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed.

#### Environmental Precautions:

Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred. Run off to sewer may create fire or explosion hazard.

#### Methods for Containment:

Dike or contain spill and absorb with inert materials (sand, sawdust, absorbent sweeping compounds, rags, etc).

#### Methods for Cleanup:

Using a non-metallic scoop, place contaminated material into an approved chemical waste container. Where possible, vacuum spilled liquid using an explosion proof vacuum to recover material.

#### Other Information:

All equipment used with handling the concentrate must be grounded. If run-off occurs, notify proper authorities as required that a spill has occurred.

### **VII. Handling and Storage:**

#### Handling Precautions:

Handling: Use with adequate ventilation and proper protective equipment.

Store in a cool, dry area, away from oxidizers. Keep away from open flames, sparks, or other ignition sources.

#### Storage Precautions:

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS! CAUTION: Combustible. Keep container closed tightly when not in use.

### **VIII. Exposure Controls/Personal Protection:**

<u>Chemical Name</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Other Limits</u>
Natural Methyl Ester	N/E	N/E	Not Available
Refined Soybean Oil	Not Established	Not Established	10 mg/m3 (mist)
2-Butoxyethanol	25 ppm	25 ppm	Not Available
Naphthenic Petroleum Distillate	5 mg/m3	5 mg/m3	Not Available

**MSDS - Material Safety Data Sheet****Product Name: LIQUID WRENCH SUPER PENETRANT (Liquid)****MSDS No.: L116****Engineering Controls:**

Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

See Section 2 for applicable exposure limits. For prolonged exposure wear protective safety glasses, gloves, and apron.

***IX. Physical and Chemical Properties:*****Boiling Point:** 320 F**Boiling Range:** Not Available**Solubility In Water:** Insoluble**Flash Point:** > 200°F**Odor Threshold:** Not Available**Vapor Density (AIR = 1):** N/A**pH Range:** Not Available**Decomposition Temp:** Not Available**Lower Explosive Limit:** N/E**Specific Gravity (H2O = 1):** 0.90**Other Information:** VOC Content: 13.28.%**Melting Point:** N/A**Freezing Point:** Not Available**Evaporation Rate (Butyl Acetate = 1):** N/A**Flash Point Method:** TCC**Appearance and Odor:** Dark Liquid with petroleum odor**Vapor Pressure (mm Hg.):** N/A**Partition Coefficient:** Not Available**Auto-Ignition Temp:** Not Available**Upper Explosive Limit:** N/E***X. Stability and Reactivity:*****Stability:**

Product is stable

**Conditions to Avoid:**

See Incompatible Materials below

**Incompatible Materials:**

Avoid contact with strong oxidizers

**Hazardous Decomposition Products:**

Normal products of combustion, smoke, carbon dioxide, carbon monoxide, and sulfur trioxides.

**Possibility of Hazardous Reactions:**

Will not occur

***XI. Toxicological Information:***

Not Established

***XII. Ecological Information:***

Not Established

***XIII. Disposal Considerations:***

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

***XIV. Transport Information:*****Shipping Name:** Not Available

# MSDS - Material Safety Data Sheet

## Product Name: LIQUID WRENCH SUPER PENETRANT (Liquid)

MSDS No.: L116

DOT Hazard Class: Not Available

DOT Subsidiary Hazard Class: Not Available

UN/NA#: Not Available

Packing Group: Not Available

### Transportation Information:

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

The above DOT description is provided to assist in the proper shipping classification of this product by ground and may not be suitable for all shipping purposes.

For international shipping: ICAO, AND IMDG

Not Regulated

### XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

### XVI. Other Information:

Chemical State:  Liquid  Gas  Solid

Chemical Type:  Pure  Mixture

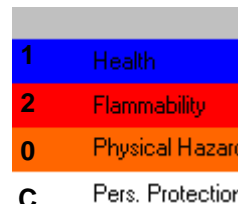
Hazard Category:  Acute  Chronic  Pressure  Fire  Reactive



### Additional Manufacturer Warnings:

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established  
N/D: Not Determined  
N/A: Not Applicable  
N/AV: Not Available



### Additional Product Information:

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**MSDS - Material Safety Data Sheet****Product Name: LIQUID WRENCH PENETRATING OIL (UPC: 078698120157)****MSDS No.: L112****I. Basic Information:****Manufacturer:** RADIATOR SPECIALTY COMPANY**Contact:** Robert Geer**Address:** 600 RADIATOR ROAD**Information Telephone Number:** 704-684-1811**City, ST Zip:** INDIAN TRAIL, NC 28079**Emergency Contact:** Rocky Mountain Poison Control Center**Country:****Emergency Telephone Number:** 303-623-5716**Product Name:** LIQUID WRENCH PENETRATING OIL (UPC: 078698120157)**Emergency Restrictions:****MSDS No.:** L112**Issue Date:** 02/19/2008**Supersedes Date:** 10/12/2006**II. Hazards Identification:****EMERGENCY OVERVIEW**

Danger: Flammable. Harmful or fatal if swallowed. Eye and skin irritant. Contents under pressure.

Level 3 Aerosol

**OSHA Regulatory Status**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Potential Health Effects****Route(s) of Entry:**

Absorption, Inhalation, and Ingestion.

**Health Hazards (Acute and Chronic):**

N/D

**Signs and Symptoms:**

Eye Contact: Irritant. Prolonged contact may cause conjunctivitis.

Skin Contact: Irritant. Defatting of tissue, dermatitis may occur.

Inhalation: Irritant to mucous membranes. Repeated exposure may cause narcosis, dizziness, respiratory or lung irritation.

Ingestion: HARMFUL OR FATAL IF SWALLOWED. May cause burns to mouth, throat &amp; stomach.

**Medical Conditions Generally Aggravated by Exposure:**

N/D

**Other Health Warnings:**

Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

**Potential Environmental Effects**

Not Available

**III. Composition/Information on Ingredients:**

Chemical Name	CAS No.	% Range	Trade Secret
Carbon dioxide	124-38-9	1.0 - 5.0	
Fragrance	Proprietary	0.1 - 1.0	
Kerosene	8008-20-6	40.0 - 70.0	
Naphthenic Petroleum Distillate	64742-52-5	15.0 - 40.0	
Solvent-Refined Heavy Paraffinic	64741-88-4	0.1 - 1.0	

**MSDS - Material Safety Data Sheet****Product Name: LIQUID WRENCH PENETRATING OIL (UPC:  
078698120157)****MSDS No.: L112****IV. First Aid Measures:****Emergency and First Aid Procedures:**

Eye Contact: Flush eyes with clean water for 15 minutes while lifting eyelids. Get prompt medical attention.

Skin Contact: Wash with soap and water thoroughly. If adverse effects persist, get prompt medical attention. Launder contaminated clothing before reuse.

Inhalation: Remove to fresh air. If breathing becomes difficult give oxygen and get prompt medical attention. If breathing stops, give artificial respiration and get prompt medical attention.

Ingestion: DO NOT INDUCE VOMITING! Call Poison Control Center, physician, or hospital emergency room immediately. Aspiration of vomitus into the lungs can cause pneumonitis, which can be fatal.

**Note to Physicians:**

N/E

**V. Fire Fighting Measures:****Suitable Extinguishing Media:**

Water Fog, Foam, Carbon Dioxide, Dry Chemical

**Unsuitable Extinguishing Media:**

Do not use forced water stream as this could cause the fire to spread.

**Products of Combustion:**

Normal products of combustion, smoke, carbon dioxide, carbon monoxide, and sulfur trioxides.

**Protection of Firefighters:**

Wear self-contained positive pressure breathing apparatus and protective clothes. Use shield to protect from rupturing and venting containers. At elevated temperatures containers may vent, rupture or burst, even violently

**VI. Accidental Release Measures:****Personal Precautions:**

Eliminate all ignition sources. Persons not wearing protective equipment should be excluded from area of spill until clean up has been completed.

**Environmental Precautions:**

Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred. Run off to sewer may create fire or explosion hazard.

**Methods for Containment:**

Dike or contain spill and absorb with inert materials (sand, sawdust, absorbent sweeping compounds, rags, etc).

**Methods for Cleanup:**

Using a non-metallic scoop, place contaminated material into an approved chemical waste container. Where possible, vacuum spilled liquid using an explosion proof vacuum to recover material.

**Other Information:**

All equipment used with handling the concentrate must be grounded. If run-off occurs, notify proper authorities as required that a spill has occurred.

**VII. Handling and Storage:****Handling Precautions:**

Use with adequate ventilation and proper protective equipment.

Do not use or store near fire, sparks, or open flame. Do not puncture or incinerate container. Exposure to sunlight and temperatures above 120° may cause container to vent, rupture, or burst.

**Storage Precautions:**

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS! Danger: Flammable.

**VIII. Exposure Controls/Personal Protection:**



**MSDS - Material Safety Data Sheet****Product Name: LIQUID WRENCH PENETRATING OIL (UPC: 078698120157)****MSDS No.: L112**

Chemical Name	OSHA PEL	ACGIH TLV	Other Limits
Kerosene	N/AV	100 ppm	Not Available
Naphthenic Petroleum Distillate	5 mg/m3	5 mg/m3	Not Available
Solvent-Refined Heavy Paraffinic	5 mg/m3	5 mg/m3	Not Available
Fragrance	N/D	N/D	Not Available
Carbon dioxide	N/AV	5000 ppm	Not Available

**Engineering Controls:**

Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

See Section 2 for applicable exposure limits. For prolonged exposure wear protective safety glasses, gloves, and apron.

**IX. Physical and Chemical Properties:****Boiling Point:** 320 F**Boiling Range:** Not Available**Solubility in Water:** Insoluble**Flash Point:** 132F**Odor Threshold:** Not Available**Vapor Density (AIR = 1):** N/A**pH Range:** Not Available**Decomposition Temp:** Not Available**Lower Explosive Limit:** 0.7%**Specific Gravity (H20 = 1):** 0.85**Other Information:** VOC Content: 36.938**Melting Point:** N/A**Freezing Point:** Not Available**Evaporation Rate (Butyl Acetate = 1):** N/A**Flash Point Method:** TCC**Appearance and Odor:** Dark Liquid with petroleum odor**Vapor Pressure (mm Hg.):** N/A**Partition Coefficient:** Not Available**Auto-Ignition Temp:** Not Available**Upper Explosive Limit:** 5%**X. Stability and Reactivity:****Stability:**

Product is stable

**Conditions to Avoid:**

See Incompatible Materials below

**Incompatible Materials:**

Avoid contact with strong oxidizers

**Hazardous Decomposition Products:**

Normal products of combustion, smoke, carbon dioxide, carbon monoxide, and sulfur trioxides.

**Possibility of Hazardous Reactions:**

Will not occur

**XI. Toxicological Information:**

N/D

**MSDS - Material Safety Data Sheet****Product Name: LIQUID WRENCH PENETRATING OIL (UPC:  
078698120157)****MSDS No.: L112****XII. Ecological Information:**

N/D

**XIII. Disposal Considerations:**

DISPOSAL: This container may be recycled in aerosol recycling centers when empty. Before offering for recycling, empty the can by using the product according to the label. DO NOT PUNCTURE! If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations.

**XIV. Transport Information:****Shipping Name:** Not Available**DOT Hazard Class:** Not Available**UN/NA#:** Not Available**DOT Subsidiary Hazard Class:** Not Available**Packing Group:** Not Available**Transportation Information:**

DOT Hazard Class: ORM-D

Shipping Name: Consumer Commodity

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for international and air shipping purposes.

ICAO/IATA (US)  
Shipping Name: Aerosols  
Class: 2.1  
UN number: UN1950

International:

ICAO/IATA  
UN number: UN1950  
Shipping Name: Aerosols  
Class: 2.1

IMDG  
UN number: UN1950  
Shipping Name: Aerosols  
Class: 2.1  
EmS: F-D, S-U

**XV. Regulatory Information:**

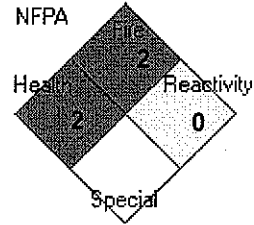
See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

Warning: This product contains a chemical(s) known to the State of California to cause cancer or birth defects or other reproductive harm.

**MSDS - Material Safety Data Sheet****Product Name: LIQUID WRENCH PENETRATING OIL (UPC: 078698120157)****MSDS No.: L112****XVI. Other Information:**Chemical State:  Liquid  Gas  SolidChemical Type:  Pure  Mixture

Hazard Category:

 Acute  Chronic  Fire  Pressure  Reactive**Additional Manufacturer Warnings:**

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

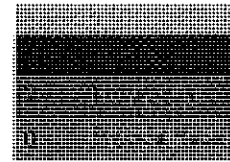
N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

**Additional Product Information:**

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**C** Pers. Protection



# MSDS - Material Safety Data Sheet

**Product Name: RUST RAIDER**

MSDS No.: B540

**I. Basic Information:**

**Manufacturer:** RADIATOR SPECIALTY COMPANY  
**Address:** 600 RADIATOR ROAD  
**City, ST Zip:** INDIAN TRAIL, NC 28079  
**Emergency Contact:** Rocky Mountain Poison Control Center  
**Emergency Telephone Number:** 303-623-5716  
**Contact:** Robert Geer  
**Information Telephone Number:** 704-684-1811



**Last Update:** 03/21/2005      **Expiration Date:**  
**Chemical State:**     Liquid       Gas       Solid  
**Chemical Type:**     Pure       Mixture

2	Health
0	Flammability
1	Reactivity
C	Pers. Protection

**II. Ingredients:**

Trade Secret

CAS No.	Chemical Name	% Range	EHS		IARC		SARA		OSHA PEL	ACGIH TLV	Other Limits
			NTP		SUB Z	313					
1303-96-4	Borates, tetra, sodium salts - decahydrate	5-10							N/E	5 mg/m3	
1310-58-3	Potassium hydroxide	1-6							N/E	2 mg/m3	2 mg/m3
2492-26-4	Sodium 2-mercaptobenzothiazol	1-6							N/E	N/E	
64665-57-2	Sodium Tolyltriazole	< 1							N/E	N/E	
7732-18-5	Water	85-95									

**III. Hazardous Identification:**

**Hazard Category:**  
 Acute       Chronic       Fire       Pressure       Reactive

**Hazardous Identification Information:**  
 Caution: May be harmful if swallowed. Eye and skin irritant.

**IV. First Aid Measures:**

**Route(s) of Entry:**  
 Absorption, Eye, Inhalation, and Ingestion.

**Health Hazards (Acute and Chronic):**  
 Eye and skin irritant

**Signs and Symptoms:**  
 Eye Contact: Irritant. Direct spray of vapors may be irritating or harmful to eyes.  
 Skin Contact: Irritant.  
 Inhalation: High concentration of vapors may irritate nose and throat and cause headaches and nausea.  
 Ingestion: Can cause irritation, gastric disturbances, diarrhea, and nausea..

**Medical Conditions Generally Aggravated by Exposure:**

# MSDS - Material Safety Data Sheet

**Product Name: RUST RAIDER**

**MSDS No.: B540**

None known

**Emergency and First Aid Procedures:**

Eye Contact: Flush eyes with water for 15 minutes while lifting upper and lower eyelids and get prompt medical attention.

Skin Contact: Wash with soap and water. If irritation persists, get prompt medical attention.

Inhalation: Move to fresh air. If breathing becomes difficult get prompt medical attention.

Ingestion: Drink water or milk. Call Poison Control Center, physician, or hospital emergency room immediately.

**Other Health Warnings:**

None Known

## V. Fire Fighting Measures:

**Flash Point:** None

**Lower Explosive Limit:** N/A

**Upper Explosive Limit:** N/A

**F.P. Method:**

**Fire Extinguishing Media:** Water Fog, Foam, Carbon Dioxide, Dry Chemical

**Special Fire Fighting Procedures:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

**Unusual Fire and Explosion:**

None Known

## VI. Accidental Release Measures:

**Steps to be Taken in Case Material is Released or Spilled:**

Use appropriate protective equipment. Contain spill and then absorb spill with inert material or rags and scoop into a chemical waste container. Neutralize remaining traces of material and flush with water followed by liberal covering with sodium bicarbonate. All clean-up material should be removed and placed in approved containers for disposal. Rinse water may be disposed of down a sanitary sewer system if authorized by the local municipality.

## VII. Handling and Storage:

**Precautions to be Taken:**

Store in cool place below 120°F away from acids and oxidizing agents.

**Other Precautions:**

Keep container closed tightly when not in use.

## VIII. Exposure Controls/Personal Protection:

**Ventilation Requirements:**

See Section 2 for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

For prolonged exposure to the material, wear safety glasses, gloves, and apron. If exposed to vapor mist, wear approved respirator designed to remove chemicals from the vapor mist.

# MSDS - Material Safety Data Sheet

**Product Name: RUST RAIDER**

MSDS No.: B540

## IX. Physical and Chemical Properties:

Boiling Point: 212 F

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): < 1

Vapor Pressure (mm Hg.): N/D

Specific Gravity (H2O = 1): 1.05000

Vapor Density (AIR = 1): N/D

Solubility In Water: Complete

Appearance and Odor:

Other Information: pH: 11-12

Blue transparent liquid with slight odor

Insoluble in solvent

% Volatiles by wt. > 70%

% VOC's: nil

## X. Stability and Reactivity:

Stability:

Stable

Incompatibility (Materials to Avoid):

Oxidizing agents and acids

Decomposition/By Products:

Normal products of combustion

Hazardous Polymerization:

Will not occur

## XI. Toxicological Information:

N/D

## XII. Ecological Information:

N/D

## XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

## XIV. Transport Information:

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

## XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

## XVI. Other Information:

# *MSDS - Material Safety Data Sheet*

***Product Name: RUST RAIDER***

***MSDS No.: B540***

Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

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**MSDS - Material Safety Data Sheet****Product Name: RUST RAIDER**

MSDS No.: B534

**I. Basic Information:****Manufacturer:** RADIATOR SPECIALTY COMPANY**Address:** 600 RADIATOR ROAD**City, ST Zip:** INDIAN TRAIL, NC 28079**Emergency Contact:** Rocky Mountain Poison Control Center**Emergency Telephone Number:** 303-623-5716**Contact:** Robert Geer**Information Telephone Number:** 704-684-1811**Last Update:** 03/21/2005**Expiration Date:****Chemical State:**  Liquid  Gas  Solid**Chemical Type:**  Pure  Mixture

2	Health
0	Flammability
1	Reactivity
C	Pers. Protection

**II. Ingredients:** Trade Secret

CAS No.	Chemical Name	% Range	EHS		IARC		SARA		OSHA PEL	ACGIH TLV	Other Limits
			NTP		SUB Z	313					
1303-96-4	Borates, tetra, sodium salts - decahydrate	5-10						N/E		5 mg/m3	
1310-58-3	Potassium hydroxide	1-6						N/E		2 mg/m3	2 mg/m3
2492-26-4	Sodium 2-mercaptobenzothiazol	1-6						N/E		N/E	
64665-57-2	Sodium Tolyltriazole	< 1						N/E		N/E	
7732-18-5	Water	85-95									

**III. Hazardous Identification:****Hazard Category:**
 Acute  Chronic  Fire  Pressure  Reactive
**Hazardous Identification Information:**

Caution: May be harmful if swallowed. Eye and skin irritant.

**IV. First Aid Measures:****Route(s) of Entry:**

Absorption, Eye, Inhalation, and Ingestion.

**Health Hazards (Acute and Chronic):**

Eye and skin irritant

**Signs and Symptoms:**

Eye Contact: Irritant. Direct spray of vapors may be irritating or harmful to eyes.

Skin Contact: Irritant.

Inhalation: High concentration of vapors may irritate nose and throat and cause headaches and nausea.

Ingestion: Can cause irritation, gastric disturbances, diarrhea, and nausea..

**Medical Conditions Generally Aggravated by Exposure:**

# MSDS - Material Safety Data Sheet

**Product Name: RUST RAIDER**

**MSDS No.: B534**

None known

**Emergency and First Aid Procedures:**

Eye Contact: Flush eyes with water for 15 minutes while lifting upper and lower eyelids and get prompt medical attention.

Skin Contact: Wash with soap and water. If irritation persists, get prompt medical attention.

Inhalation: Move to fresh air. If breathing becomes difficult get prompt medical attention.

Ingestion: Drink water or milk. Call Poison Control Center, physician, or hospital emergency room immediately.

**Other Health Warnings:**

None Known

**V. Fire Fighting Measures:**

**Flash Point:** None

**Lower Explosive Limit:** N/A

**Upper Explosive Limit:** N/A

**F.P. Method:**

**Fire Extinguishing Media:** Water Fog, Foam, Carbon Dioxide, Dry Chemical

**Special Fire Fighting Procedures:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

**Unusual Fire and Explosion:**

None Known

**VI. Accidental Release Measures:**

**Steps to be Taken in Case Material is Released or Spilled:**

Use appropriate protective equipment. Contain spill and then absorb spill with inert material or rags and scoop into a chemical waste container. Neutralize remaining traces of material and flush with water followed by liberal covering with sodium bicarbonate. All clean-up material should be removed and placed in approved containers for disposal. Rinse water may be disposed of down a sanitary sewer system if authorized by the local municipality.

**VII. Handling and Storage:**

**Precautions to be Taken:**

Store in cool place below 120°F away from acids and oxidizing agents.

**Other Precautions:**

Keep container closed tightly when not in use.

**VIII. Exposure Controls/Personal Protection:**

**Ventilation Requirements:**

See Section 2 for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

For prolonged exposure to the material, wear safety glasses, gloves, and apron. If exposed to vapor mist, wear approved respirator designed to remove chemicals from the vapor mist.

# MSDS - Material Safety Data Sheet

**Product Name: RUST RAIDER**

MSDS No.: B534

## IX. Physical and Chemical Properties:

**Boiling Point:** 212 F

**Melting Point:** N/A

**Evaporation Rate (Butyl Acetate = 1):** < 1

**Vapor Pressure (mm Hg.):** N/D

**Specific Gravity (H2O = 1):** 1.05000

**Vapor Density (AIR = 1):** N/D

**Solubility In Water:** Complete

**Appearance and Odor:**

**Other Information:** pH: 11-12

Blue transparent liquid with slight odor

Insoluble in solvent

% Volatiles by wt. > 70%

% VOC's: nil

## X. Stability and Reactivity:

**Stability:**

Stable

**Incompatibility (Materials to Avoid):**

Oxidizing agents and acids

**Decomposition/By Products:**

Normal products of combustion

**Hazardous Polymerization:**

Will not occur

## XI. Toxicological Information:

N/D

## XII. Ecological Information:

N/D

## XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

## XIV. Transport Information:

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

## XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

## XVI. Other Information:

## *MSDS - Material Safety Data Sheet*

***Product Name: RUST RAIDER***

***MSDS No.: B534***

Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

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**MSDS - Material Safety Data Sheet****Product Name: RUST RAIDER**

MSDS No.: B532

**I. Basic Information:****Manufacturer:** RADIATOR SPECIALTY COMPANY**Address:** 600 RADIATOR ROAD**City, ST Zip:** INDIAN TRAIL, NC 28079**Emergency Contact:** Rocky Mountain Poison Control Center**Emergency Telephone Number:** 303-623-5716**Contact:** Robert Geer**Information Telephone Number:** 704-684-1811**Last Update:** 03/21/2005**Expiration Date:****Chemical State:**  Liquid  Gas  Solid**Chemical Type:**  Pure  Mixture

2	Health
0	Flammability
1	Reactivity
C	Pers. Protection

**II. Ingredients:** Trade Secret

CAS No.	Chemical Name	% Range	EHS		IARC		SARA		OSHA PEL	ACGIH TLV	Other Limits
			NTP		SUB Z	313					
1303-96-4	Borates, tetra, sodium salts - decahydrate	5-10							N/E	5 mg/m3	
1310-58-3	Potassium hydroxide	1-6							N/E	2 mg/m3	2 mg/m3
2492-26-4	Sodium 2-mercaptobenzothiazol	1-6							N/E	N/E	
64665-57-2	Sodium Tolytriazole	< 1							N/E	N/E	
7732-18-5	Water	85-95									

**III. Hazardous Identification:****Hazard Category:**
 Acute  Chronic  Fire  Pressure  Reactive
**Hazardous Identification Information:**

Caution: May be harmful if swallowed. Eye and skin irritant.

**IV. First Aid Measures:****Route(s) of Entry:**

Absorption, Eye, Inhalation, and Ingestion.

**Health Hazards (Acute and Chronic):**

Eye and skin irritant

**Signs and Symptoms:**

Eye Contact: Irritant. Direct spray of vapors may be irritating or harmful to eyes.

Skin Contact: Irritant.

Inhalation: High concentration of vapors may irritate nose and throat and cause headaches and nausea.

Ingestion: Can cause irritation, gastric disturbances, diarrhea, and nausea..

**Medical Conditions Generally Aggravated by Exposure:**

# MSDS - Material Safety Data Sheet

**Product Name: RUST RAIDER**

**MSDS No.: B532**

None known

**Emergency and First Aid Procedures:**

Eye Contact: Flush eyes with water for 15 minutes while lifting upper and lower eyelids and get prompt medical attention.

Skin Contact: Wash with soap and water. If irritation persists, get prompt medical attention.

Inhalation: Move to fresh air. If breathing becomes difficult get prompt medical attention.

Ingestion: Drink water or milk. Call Poison Control Center, physician, or hospital emergency room immediately.

**Other Health Warnings:**

None Known

## V. Fire Fighting Measures:

**Flash Point:** None

**Lower Explosive Limit:** N/A

**Upper Explosive Limit:** N/A

**F.P. Method:**

**Fire Extinguishing Media:** Water Fog, Foam, Carbon Dioxide, Dry Chemical

**Special Fire Fighting Procedures:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

**Unusual Fire and Explosion:**

None Known

## VI. Accidental Release Measures:

**Steps to be Taken in Case Material is Released or Spilled:**

Use appropriate protective equipment. Contain spill and then absorb spill with inert material or rags and scoop into a chemical waste container. Neutralize remaining traces of material and flush with water followed by liberal covering with sodium bicarbonate. All clean-up material should be removed and placed in approved containers for disposal. Rinse water may be disposed of down a sanitary sewer system if authorized by the local municipality.

## VII. Handling and Storage:

**Precautions to be Taken:**

Store in cool place below 120°F away from acids and oxidizing agents.

**Other Precautions:**

Keep container closed tightly when not in use.

## VIII. Exposure Controls/Personal Protection:

**Ventilation Requirements:**

See Section 2 for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

For prolonged exposure to the material, wear safety glasses, gloves, and apron. If exposed to vapor mist, wear approved respirator designed to remove chemicals from the vapor mist.

# MSDS - Material Safety Data Sheet

**Product Name: RUST RAIDER**

MSDS No.: B532

## IX. Physical and Chemical Properties:

Boiling Point: 212 F

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): < 1

Vapor Pressure (mm Hg.): N/D

Specific Gravity (H2O = 1): 1.05000

Vapor Density (AIR = 1): N/D

Solubility In Water: Complete

Appearance and Odor:

Other Information: pH: 11-12

Blue transparent liquid with slight odor

Insoluble in solvent

% Volatiles by wt. > 70%

% VOC's: nil

## X. Stability and Reactivity:

Stability:

Stable

Incompatibility (Materials to Avoid):

Oxidizing agents and acids

Decomposition/By Products:

Normal products of combustion

Hazardous Polymerization:

Will not occur

## XI. Toxicological Information:

N/D

## XII. Ecological Information:

N/D

## XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

## XIV. Transport Information:

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

## XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

## XVI. Other Information:

## ***MSDS - Material Safety Data Sheet***

***Product Name: RUST RAIDER***

***MSDS No.: B532***

Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

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# MSDS - Material Safety Data Sheet

## Product Name: TITE SEAL MEDIUM WEIGHT GASKET AND JOINT COMPOUND

MSDS No.: T2566

### I. Basic Information:

Manufacturer: RADIATOR SPECIALTY COMPANY

Address: 600 RADIATOR ROAD

City, ST Zip: INDIAN TRAIL, NC 28079

Emergency Contact: Rocky Mountain Poison Control Center

Emergency Telephone Number: 303-623-5716

Contact: Robert Geer

Information Telephone Number: 704-688-3430

Last Update: 02/03/2005

Chemical State:  Liquid  Gas  Solid

Chemical Type:  Pure  Mixture



1	Health
0	Flammability
0	Reactivity
C	Pers. Protection

### II. Ingredients:

Trade Secret

CAS No.	Chemical Name	% Range	EHS		IARC		SARA		OSHA PEL	ACGIH TLV	Other Limits
			NTP	SUB Z	313						
Proprietary	Vegetable oil	30.0 - 60.0						N/E	N/E		

### III. Hazardous Identification:

Hazard Category:

Acute  Chronic  Fire  Pressure  Reactive

Hazardous Identification Information:

Eye and Skin Irritant.

### IV. First Aid Measures:

Route(s) of Entry:

Eyes, skin, ingestion

Health Hazards (Acute and Chronic):

None known

Signs and Symptoms:

Mild irritant to eyes and skin. If swallowed may cause stomach cramps and diarrhea.

Medical Conditions Generally Aggravated by Exposure:

None known

Emergency and First Aid Procedures:

Eye Contact: Flush eyes with clean water for 15 minutes while lifting eyelids and get prompt medical attention.

Skin Contact: Wash with soap and water thoroughly. If adverse effects persist, get prompt medical attention. Launder contaminated clothing before reuse.

Ingestion: DO NOT INDUCE VOMITING! Call Poison Control Center, physician, or hospital emergency room immediately.

# MSDS - Material Safety Data Sheet

## Product Name: TITE SEAL MEDIUM WEIGHT GASKET AND JOINT COMPOUND

MSDS No.: T2566

### Other Health Warnings:

Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

### V. Fire Fighting Measures:

Flash Point: 310°F

Lower Explosive Limit: N/A

Upper Explosive Limit: N/A

F.P. Method: COC

Fire Extinguishing Media: Foam, Carbon Dioxide, Dry Chemical

### Special Fire Fighting Procedures:

Wear self-contained positive pressure breathing apparatus and protective clothes. Cool containers with a water fog.

### Unusual Fire and Explosion:

None known

### VI. Accidental Release Measures:

#### Steps to be Taken in Case Material is Released or Spilled:

Use appropriate protective equipment. Contain spill and scoop into a chemical waste container. All clean-up material should be removed and placed in approved containers for disposal. Rinse water may be disposed of down a sanitary sewer system if authorized by the local municipality.

### VII. Handling and Storage:

#### Precautions to be Taken:

Store in a cool dry area, below 120° away from oxidizing agents, acids, and alkalis.

#### Other Precautions:

Wash hands thoroughly before handling food. Keep container tightly closed when not using product.

### VIII. Exposure Controls/Personal Protection:

#### Ventilation Requirements:

See Section 2 for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

#### Personal Protective Equipment:

Wear safety glasses, gloves and apron for prolonged exposure.

### IX. Physical and Chemical Properties:

Boiling Point: N/A

Melting Point: N/A

Evaporation Rate (Butyl Acetate = 1): None

Vapor Pressure (mm Hg.): N/A

Specific Gravity (H2O = 1): 1.30000

Vapor Density (AIR = 1): N/A

Solubility In Water: Insoluble

Appearance and Odor: Dark, Grey viscous paste with mild odor

Other Information: pH: neutral

Soluble in alcohols

% Volatiles by Wt: 1

% VOC: 0

# *MSDS - Material Safety Data Sheet*

## **Product Name: TITE SEAL MEDIUM WEIGHT GASKET AND JOINT COMPOUND**

MSDS No.: T2566

### **X. Stability and Reactivity:**

**Stability:**

Stable

**Incompatibility (Materials to Avoid):**

Oxidizing agents, acids and alkalis.

**Decomposition/By Products:**

Normal products of combustion: carbon dioxide, carbon monoxide, and dense smoke.

**Hazardous Polymerization:**

Will not occur

### **XI. Toxicological Information:**

N/D

### **XII. Ecological Information:**

N/D

### **XIII. Disposal Considerations:**

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

### **XIV. Transport Information:**

DOT Shipping Name: Not DOT regulated.

DOT Hazard Class: None

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for all shipping purposes.

### **XV. Regulatory Information:**

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are either exempt or listed on the US TSCA Inventory.

### **XVI. Other Information:**

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established

N/D: Not Determined

N/A: Not Applicable

N/AV: Not Available

While Radiator Specialty Company believes this data is accurate as of the revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance thereon. The data is offered solely for information, investigation, and verification. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is responsible for full compliance.



**MSDS - Material Safety Data Sheet****Product Name: WHITE BAKER SEAL THREADING AND LUBRICATING COMPOUND**

MSDS No.: T4016

**I. Basic Information:****Manufacturer:** RADIATOR SPECIALTY COMPANY**Contact:** Robert Geer**Address:** 600 RADIATOR ROAD**Information Telephone Number:** 704-684--181 1**City, ST Zip:** INDIAN TRAIL, NC 28079**Emergency Contact:** Rocky Mountain Poison Control Center**Country:****Emergency Telephone Number:** 303-623-5716**Emergency Restrictions:****Product Name:** WHITE BAKER SEAL THREADING AND LUBRICATING COMPOUND**MSDS No.:** T4016**Issue Date:** 10/27/2008**Supersedes Date:** 12/07/2005**II. Hazards Identification:****EMERGENCY OVERVIEW**

Non hazardous

**OSHA Regulatory Status**

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

**Potential Health Effects****Route(s) of Entry:**

Eyes, skin, ingestion

**Health Hazards (Acute and Chronic):**

None known

**Signs and Symptoms:**

Mild irritant to eyes and skin. If swallowed may cause stomach cramps and diarrhea.

**Medical Conditions Generally Aggravated by Exposure:**

None known

**Other Health Warnings:**

Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is a potentially fatal condition.

**Potential Environmental Effects**

Not Available

**III. Composition/Information on Ingredients:**

Chemical Name	CAS No.	% Range	Trade Secret
Grease (Calcuim complex lubricant)	Proprietary	35.0 -45.0	
Polytetrafluoroethylene	9002-84-0	10.0 - 20.0	

**IV. First Aid Measures:****Emergency and First Aid Procedures:**

Eye Contact: Flush eyes with clean water for 15 minutes while lifting eyelids and get prompt medical attention.

Skin Contact: Wash with soap and water thoroughly. If adverse effects persist, get prompt medical attention. Launder contaminated clothing before reuse.

Inhalation: Move to fresh air. If adverse effects continue, get prompt medical attention.

Ingestion: DO NOT INDUCE VOMITING! Call Poison Control Center, physician, or hospital emergency room immediately.

**Note to Physicians:**

N/D

## *MSDS - Material Safety Data Sheet*

### **Product Name: WHITE BAKER SEAL THREADING AND LUBRICATING COMPOUND**

MSDS No.: T4016

#### ***V. Fire Fighting Measures:***

**Suitable Extinguishing Media:**

Foam, Carbon Dioxide, Dry Chemical

**Unsuitable Extinguishing Media:**

Do not use water

**Products of Combustion:**

None known

**Protection of Firefighters:**

Wear self-contained positive pressure breathing apparatus and protective clothes.

#### ***VI. Accidental Release Measures:***

**Personal Precautions:**

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

**Environmental Precautions:**

Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred.

**Methods for Containment:**

Dike or contain spill and absorb with inert materials (sand, sawdust, absorbent sweeping compounds, rags, etc).

**Methods for Cleanup:**

Using a non-metallic scoop, place contaminated material into an approved chemical waste container. Where possible, vacuum spilled liquid using an explosion proof vacuum to recover material.

**Other Information:**

If run-off occurs, notify proper authorities as required that a spill has occurred.

#### ***VII. Handling and Storage:***

**Handling Precautions:**

Store in a cool dry area, below 120° away from oxidizing agents and ignition sources.

**Storage Precautions:**

Wash hands thoroughly before handling food. Keep container tightly closed when not using product.

#### ***VIII. Exposure Controls/Personal Protection:***

<b>Chemical Name</b>	<b>OSHA PEL</b>	<b>ACGIH TLV</b>	<b>Other Limits</b>
Grease (Calcuim complex lubricant)	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	Not Available
Polytetrafluoroethylene	N/D	N/D	Not Available

**Engineering Controls:**

See Section above for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**

Wear safety glasses, gloves and apron for prolonged exposure.

**MSDS - Material Safety Data Sheet****Product Name: WHITE BAKER SEAL THREADING AND LUBRICATING COMPOUND**

MSDS No.: T4016

**IX. Physical and Chemical Properties:****Boiling Point:** N/A**Boiling Range:** Not Available**Solubility In Water:** Insoluble**Flash Point:** 310°F**Odor Threshold:** Not Available**Vapor Density (AIR = 1):** N/A**pH Range:** Not Available**Decomposition Temp:** Not Available**Lower Explosive Limit:** N/A**Specific Gravity (H2O = 1):** Not Available**Other Information:** Soluble in petroleum solvents

% Volatiles by Wt: 0 %

**Melting Point:** N/A**Freezing Point:** Not Available**Evaporation Rate (Butyl Acetate = 1):** None**Flash Point Method:** COC**Appearance and Odor:** Off-white viscous paste with mild odor**Vapor Pressure (mm Hg.):** N/A**Partition Coefficient:** Not Available**Auto-Ignition Temp:** Not Available**Upper Explosive Limit:** N/A**X. Stability and Reactivity:****Stability:**

Stable

**Conditions to Avoid:**

See Incompatible materials below.

**Incompatible Materials:**

Oxidizing agents.

**Hazardous Decomposition Products:**

Normal products of combustion: carbon dioxide, carbon monoxide, and dense smoke.

**Possibility of Hazardous Reactions:**

Will not occur

**XI. Toxicological Information:**

N/D

**XII. Ecological Information:**

N/D

**XIII. Disposal Considerations:**

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the container and discard in the trash. Dispose of unused product in accordance with all local, state government and federal laws and regulations

**XIV. Transport Information:****Shipping Name:** Not Available**DOT Hazard Class:** Not Available**UN/NA#:** Not Available**Transportation Information:****DOT Subsidiary Hazard Class:** Not Available**Packing Group:** Not Available

# MSDS - Material Safety Data Sheet

## Product Name: WHITE BAKER SEAL THREADING AND LUBRICATING COMPOUND

MSDS No.: T4016

DOT Shipping Name: Not DOT regulated.  
DOT Hazard Class: None

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for all shipping purposes.

ICAO/IATA (US)  
Not Regulated

International:

ICAO/IATA  
International:  
Not Regulated

IMDG  
International:  
Not Regulated

### XV. Regulatory Information:

SARA 313 Reportable Chemicals:  
None

USA TSCA: All components of this material are either exempt or listed on the US TSCA Inventory.

State RTK Chemicals:  
None

### XVI. Other Information:

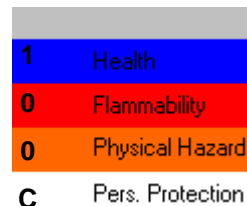
Chemical State:  Liquid     Gas     Solid  
 Chemical Type:  Pure     Mixture  
 Hazard Category:  
 Acute     Chronic     Fire  
 Pressure     Reactive



#### Additional Manufacturer Warnings:

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established  
N/D: Not Determined  
N/A: Not Applicable  
N/AV: Not Available



#### Additional Product Information:

While Radiator Specialty Company believes this data is accurate as of the revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance thereon. The data is offered solely for information, investigation, and verification. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is responsible for full compliance.



MATERIAL SAFETY DATA SHEET

MSDS 0010

=====  
 Section 1 -- PRODUCT AND COMPANY IDENTIFICATION  
 -----

	HMIS CODES	
PRODUCT NAME	Health	1
RectorSeal No. 100 Virgin	Flammability	1
	Reactivity	0
PRODUCT CODES	PPI	B

    22631, 22551, 22431, 22390, 22271, 22191, 22112

CHEMICAL FAMILY:

    Organic

USE

    Pipe Thread Sealant

MANUFACTURER'S NAME

    The RectorSeal Corporation  
     2601 Spenwick Drive  
     Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.

    Chemtrec 24 Hours  
     (800) 424-9300

DATE OF PREPARATION

    July 24, 2002

TECHNICAL SERVICE TELEPHONE NO.

    (800) 231-3345

=====  
 Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS  
 -----

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

=====  
 Section 3 -- HAZARDS IDENTIFICATION  
 -----

SUMMARY OF ACUTE HAZARDS

    May produce slight to moderate skin and eye irritation.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

    None known.

EYE CONTACT

    Irritation, watering may occur.

SKIN CONTACT

    Frequent or prolonged contact may irritate and cause dermatitis.

INGESTION

    May cause nausea and vomiting. Not expected to produce toxic effects unless large amounts are ingested.

SUMMARY OF CHRONIC HAZARDS

    None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

    Individuals with pre-existing or chronic diseases of the eyes, skin or persons with chemical sensitivity may have increased susceptibility to excessive

=====  
 Section 4 -- FIRST AID MEASURES  
 -----

If INHALED: N/A

If on SKIN: Wash with soap and water. Seek medical attention if irritation persists.

If in EYES: Flush with large amounts of water. Get medical attention if irritation persists.

If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

=====  
 Section 5 -- FIRE FIGHTING MEASURES  
 -----



No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

-----  
TOXICOLOGY DATA

Ingredient Name

-----  
Oral-Rat                    LD50: N/A  
Inhalation-Rat            LC50: N/A  
=====

Section 12 -- Ecological Information

-----  
ECOLOGICAL DATA

Ingredient Name

-----  
Food Chain Concentration Potential      N/A  
WATERFOWL TOXICITY                      N/A  
BOD    N/A  
AQUATIC TOXICITY                          N/A  
=====

Section 13 -- DISPOSAL CONSIDERATIONS

-----  
Waste Classification: Non-regulated solid waste  
Disposal Method:            Approved landfill  
Waste from this product is not considered hazardous as defined under the  
Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in  
accordance with Federal, State, and Local regulation regarding pollution.  
=====

Section 14 -- TRANSPORTATION INFORMATION

-----  
DOT:    Non-Regulated  
OCEAN (IMDG):                                Non-Regulated  
AIR (IATA):                                    Non-Regulated  
WHMIS (CANADA):                              Non-Regulated  
=====

Section 15 -- REGULATORY INFORMATION

-----  
REGULATORY DATA

Ingredient Name

-----  
SARA 313                                      N/A  
TSCA Inventory                                All components listed  
CERCLA RQ                                    N/A  
RCRA Code                                     N/A  
=====

Section 16 -- OTHER INFORMATION

-----  
This document is prepared pursuant to the OSHA Hazard Communication  
Standard (29 CFR 1910.1200). The information herein is given in good faith,  
but no warranty, expressed or implied is made. Consult RectorSeal for further  
information: (713) 263-8001



MATERIAL SAFETY DATA SHEET

MSDS 0169

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

		HMIS CODES	
PRODUCT NAME	Metacaulk 1000	Health	1
		Flammability	0
		Reactivity	0
PRODUCT CODES	66302, 66303, 66305, 66307, 66309, 66312	PPI	B
CHEMICAL FAMILY:	Organic/Inorganic		
USE	Firestopping Sealant		
MANUFACTURER'S NAME	The RectorSeal Corporation 2601 Spenwick Drive Houston, Texas 77055 USA	EMERGENCY TELEPHONE NO.	Chemtrec 24 Hours (800) 424-9300
DATE OF PREPARATION	August 7, 2002	TECHNICAL SERVICE TELEPHONE NO.	(800) 231-3345

Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

Section 3 -- HAZARDS IDENTIFICATION

SUMMARY OF ACUTE HAZARDS  
May cause skin irritation.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION  
Not a respiratory irritant.

EYE CONTACT  
Contact may cause eye irritation.

SKIN CONTACT  
Contact may cause skin irritation.

INGESTION  
Possible irritation to mucous membranes of the mouth, throat, and stomach.

SUMMARY OF CHRONIC HAZARDS  
None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE  
Persons with pre-existing skin conditions or chemical allergies may be more susceptible to contact effects of the cured elastomer.

Section 4 -- FIRST AID MEASURES

If INHALED: Not a respiratory irritant.

If on SKIN: Wash with soap and water. If irritation occurs, seek

medical attention.

If in EYES: Immediately flush with large amounts of water. If irritation occurs, seek medical attention.

If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

=====  
Section 5 -- FIRE FIGHTING MEASURES  
-----

FLASH POINT	LEL	UEL
None	N/D	N/D

EXTINGUISHING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Heat may build up and rupture closed containers.

=====  
Section 6 -- ACCIDENTAL RELEASE MEASURES  
-----

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

=====  
Section 7 -- HANDLING AND STORAGE  
-----

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. To prevent freezing and possible rupture of container, do not store below 40 F.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all product precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

=====  
Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION  
-----

RESPIRATORY PROTECTION (SPECIFY TYPE): None required.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: N/A

MECHANICAL (GENERAL): Preferable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Safety glasses (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

=====  
Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES  
-----

BOILING POINT: 212 F (100 C) @ 760mm Hg

SPECIFIC GRAVITY (H2O = 1): 1.25  
VAPOR PRESSURE (mm Hg): 17 @ 68 F (20 C)  
MELTING POINT: N/A  
VAPOR DENSITY (AIR = 1): N/A  
EVAPORATION RATE (ETHYL ACETATE = 1): >1  
APPEARANCE/ODOR: Red Paste/Mild Odor  
SOLUBILITY IN WATER: Soluble

=====  
Section 10 -- STABILITY AND REACTIVITY  
-----

STABILITY: Stable  
CONDITIONS TO AVOID: None  
INCOMPATIBILITY (MATERIALS TO AVOID): None known.  
HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.  
HAZARDOUS POLYMERIZATION: Will not occur.

=====  
Section 11 -- TOXICOLOGY INFORMATION  
-----

CHRONIC HEALTH HAZARDS  
No ingredients in this product is an IARC, NTP or OSHA listed carcinogen.

TOXICOLOGY DATA  
Ingredient Name

None

=====  
Section 12 -- Ecological Information  
-----

ECOLOGICAL DATA  
Ingredient Name

None

Food Chain Concentration Potential	N/A
WATERFOWL TOXICITY	N/A
BOD	N/A
AQUATIC TOXICITY	N/A

=====  
Section 13 -- DISPOSAL CONSIDERATIONS  
-----

Waste Classification: Non-regulated solid waste  
Disposal Method: Approved landfill  
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

=====  
Section 14 -- TRANSPORTATION INFORMATION  
-----

DOT: Non-Regulated  
OCEAN (IMDG): Non-Regulated  
AIR (IATA): Non-Regulated  
WHMIS (CANADA): Non-Regulated

Section 15 -- REGULATORY INFORMATION

-----  
REGULATORY DATA  
Ingredient Name  
-----

None

SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

=====  
Section 16 -- OTHER INFORMATION  
-----

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001



MATERIAL SAFETY DATA SHEET

MSDS 0013

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

		HMIS CODES	
PRODUCT NAME	RectorSeal No. 5 Sub-Zero	Health	1
		Flammability	1
		Reactivity	0
PRODUCT CODES	27731, 27651, 27541, 27460, 27371, 27111, 27222	PPI	B
CHEMICAL FAMILY:	Organic		
USE	Pipe Thread Sealant		
MANUFACTURER'S NAME	The RectorSeal Corporation 2601 Spenwick Drive Houston, Texas 77055 USA	EMERGENCY TELEPHONE NO.	Chemtrec 24 Hours (800) 424-9300
DATE OF PREPARATION	July 24, 2002	TECHNICAL SERVICE TELEPHONE NO.	(800) 231-3345

Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
16 Max	111-77-3	Diethylene Glycol Methyl Ether	
		ACGIH TLV	N/D ppm
		OSHA PEL	N/D ppm

Section 3 -- HAZARDS IDENTIFICATION

SUMMARY OF ACUTE HAZARDS

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin,

respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

=====  
Section 4 -- FIRST AID MEASURES  
-----

- If INHALED: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
- If on SKIN: Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
- If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
- If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

=====  
Section 5 -- FIRE FIGHTING MEASURES  
-----

FLASH POINT	LEL	UEL
208 F (98 C) SETA CC	N/D	N/D

EXTINGUISHING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible - moderate flash point. Vapors heavier than air and may travel along the ground or to low spots at considerable distances to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture containers.

=====  
Section 6 -- ACCIDENTAL RELEASE MEASURES  
-----

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

=====  
Section 7 -- HANDLING AND STORAGE  
-----

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

=====  
Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION  
-----

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined poorly ventilated areas,

use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: Explosion-proof equipment.

MECHANICAL (GENERAL): Preferable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

=====  
Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES  
-----

BOILING POINT: 374 F (190 C) @ 760mm Hg  
SPECIFIC GRAVITY (H2O = 1): 1.40  
VAPOR PRESSURE (mm Hg): 0.25 @ 77 F (20 C)  
MELTING POINT: N/A  
VAPOR DENSITY (AIR = 1): >1  
EVAPORATION RATE (ETHYL ACETATE = 1): <1  
APPEARANCE/ODOR: Gray Paste/Mild Odor  
SOLUBILITY IN WATER: 16%

=====  
Section 10 -- STABILITY AND REACTIVITY  
-----

STABILITY: Stable  
CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing. Temperatures above 500 F (260 C).  
INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen, strong oxidizing materials, molten alkali metals.  
HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.  
HAZARDOUS POLYMERIZATION: Will not occur.

=====  
Section 11 -- TOXICOLOGY INFORMATION  
-----

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

-----  
TOXICOLOGY DATA

Ingredient Name

-----  
Diethylene Glycol Methyl Ether  
Oral-Rat LD50:5500 mg/kg  
Inhalation-Rat LC50:N/D  
=====

Section 12 -- Ecological Information  
-----

ECOLOGICAL DATA

Ingredient Name

-----  
Diethylene Glycol Methyl Ether

Food Chain Concentration Potential N/A  
WATERFOWL TOXICITY N/A  
BOD 34%  
AQUATIC TOXICITY N/A

=====  
Section 13 -- DISPOSAL CONSIDERATIONS  
-----

Waste Classification: Non-regulated solid waste  
Disposal Method: Approved landfill  
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

=====  
Section 14 -- TRANSPORTATION INFORMATION  
-----

DOT: Non-Regulated  
OCEAN (IMDG): Non-Regulated  
AIR (IATA): Non-Regulated  
WHMIS (CANADA): Non-Regulated

=====  
Section 15 -- REGULATORY INFORMATION  
-----

REGULATORY DATA  
Ingredient Name

-----  
Diethylene Glycol Methyl Ether  
SARA 313 Yes  
TSCA Inventory Yes  
CERCLA RQ N/A  
RCRA Code N/A  
-----

=====  
Section 16 -- OTHER INFORMATION  
-----

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001

## MATERIAL SAFETY DATA SHEET

MSDS 0495

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

		HMIS CODES	
PRODUCT NAME		Health	1
Nokorode Regular Paste Flux		Flammability	1
		Reactivity	0
PRODUCT CODES		PPI	B
14000, 14010, 14020, 14030			
CHEMICAL FAMILY:			
Organic/Inorganic			
USE			
Soldering Flux			
MANUFACTURER'S NAME		EMERGENCY TELEPHONE NO.	
The RectorSeal Corporation		Chemtrec 24 Hours	
2601 Spenwick Drive		(800) 424-9300	
Houston, Texas 77055 USA			
VALIDATION DATE		TECHNICAL SERVICE TELEPHONE NO.	
February 16, 2006		(800) 231-3345	
REVISION DATE			
February 16, 2006			

## Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
10-25	7646-85-7	Zinc Chloride	
		ACGIH TLV	1 mg/m3
		OSHA PEL	1 mg/m3
10-25	12125-02-9	Ammonium Chloride	
		ACGIH TLV	10 mg/m3
		OSHA PEL	10 mg/m3
70-90	8009-03-8	Petrolatum	
		ACGIH TLV	N/D
		OSHA PEL	N/D

## Section 3 -- HAZARDS IDENTIFICATION

## SUMMARY OF ACUTE HAZARDS

Irritation to respiratory system from fumes evolved during soldering.  
Eye contact may cause intense irritation and injury.

## ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

## INHALATION

Irritation to respiratory system from fumes evolved during soldering.

## EYE CONTACT

Contact may cause intense irritation and injury.

## SKIN CONTACT

May cause skin irritation.

## INGESTION

Nausea, vomiting, irritation to digestive system.

## SUMMARY OF CHRONIC HAZARDS

Short term effects to liver and kidneys can occur. Chemical irritation from continued skin contact can occur. Continuous industrial use in small unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of respiratory tract.

## MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver,

or kidneys may have increased susceptibility to excessive exposure.

---

#### Section 4 -- FIRST AID MEASURES

---

If INHALED: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

If on SKIN: Immediately wash with soap and water. Remove and wash any contaminated clothing.

If in EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention if irritation persists.

If SWALLOWED: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

---

#### Section 5 -- FIRE FIGHTING MEASURES

---

FLASH POINT	LEL	UEL
>400 F (204 C) SETA CC	N/D	N/D
EXTINGUISHING MEDIA		

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained full face piece breathing apparatus and other protective clothing. Hazardous decomposition products possible (see Section 10). May release ZnO and HCl fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Heat may build up pressure and rupture closed containers.

---

#### Section 6 -- ACCIDENTAL RELEASE MEASURES

---

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

---

#### Section 7 -- HANDLING AND STORAGE

---

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Store flux at ambient conditions. Wash thoroughly after handling to remove all residue.

OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

---

#### Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

---

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined, poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air respirators during soldering operations until fumes have dissipated.

VENTILATION - LOCAL EXHAUST: Acceptable

SPECIAL: N/A

MECHANICAL (GENERAL): Acceptable

OTHER: N/A

PROTECTIVE GLOVES: Wear rubber gloves.

EYE PROTECTION: Safety glasses (ANSI Z-87.1 or equivalent)

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.

WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

---

#### Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

-----

BOILING POINT:	N/A
SPECIFIC GRAVITY (H2O = 1):	1.06
VAPOR PRESSURE (mm Hg):	< 0.01 @ 68 F (20 C)
MELTING POINT:	120-150 F (52-66 C)
VAPOR DENSITY (AIR = 1):	N/A
EVAPORATION RATE (ETHYL ACETATE = 1):	N/A
APPEARANCE/ODOR:	Tan / Petroleum Odor
SOLUBILITY IN WATER:	Insoluble

VOLATILE ORGANIC COMPOUNDS (VOC) Content  
(Theoretical Percentage By Weight): 0% or (0 g/L)

=====  
Section 10 -- STABILITY AND REACTIVITY  
-----

STABILITY: Stable  
CONDITIONS TO AVOID: None  
INCOMPATIBILITY (MATERIALS TO AVOID): None known  
HAZARDOUS DECOMPOSITION PRODUCTS: Toxic fumes of zinc, chlorine, and HCL may be evolved during soldering.  
HAZARDOUS POLYMERIZATION: Will not occur.

=====  
Section 11 -- TOXICOLOGY INFORMATION  
-----

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

-----  
TOXICOLOGY DATA

Ingredient Name

-----  
Zinc Chloride

Oral-Rat LD50:350 mg/kg  
Inhalation-Rat LCLo:1960 mg/m3/10M

Ammonium Chloride

Oral-Rat LD50:1650 mg/kg  
Inhalation-Rat LC50:N/D

Petrolatum

Oral-Rat LD50:N/D  
Inhalation-Rat LC50:N/D

=====  
Section 12 -- Ecological Information  
-----

ECOLOGICAL DATA

Ingredient Name

-----  
Zinc Chloride

Food Chain Concentration Potential	None
WATERFOWL TOXICITY	N/A
BOD	None
AQUATIC TOXICITY:	7.2 ppm/96 hr/medium bluegill/TLm

Ammonium Chloride

Food Chain Concentration Potential	None
WATERFOWL TOXICITY	N/A
BOD	N/A
AQUATIC TOXICITY:	6 ppm/96 hr/sunfish TLm

Petrolatum

Food Chain Concentration Potential	N/D
WATERFOWL TOXICITY	N/D
BOD	N/D
AQUATIC TOXICITY:	N/D

=====  
 Section 13 -- DISPOSAL CONSIDERATIONS  
 -----

Waste Classification: Non-regulated solid waste  
 Disposal Method: Approved landfill  
 Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

 =====

 Section 14 -- TRANSPORTATION INFORMATION  
 -----

DOT: Non-Regulated  
 OCEAN (IMDG): Non-Regulated  
 AIR (IATA): Non-Regulated  
 WHMIS (CANADA): Non-Regulated

 =====

 Section 15 -- REGULATORY INFORMATION  
 -----

 REGULATORY DATA  
 Ingredient Name  
 -----

Zinc Chloride	SARA 313	Yes
	TSCA Inventory	Yes
	CERCLA RQ	1000 lb.
	RCRA Code	N/A
Ammonium Chloride	SARA 313	No
	TSCA Inventory	Yes
	CERCLA RQ	N/A
	RCRA Code	N/A
Petrolatum	SARA 313	No
	TSCA Inventory	Yes
	CERCLA RQ	N/A
	RCRA Code	N/A

 =====

 Section 16 -- OTHER INFORMATION  
 -----

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## MATERIAL SAFETY DATA SHEET

MSDS 0011

-----  
Section 1 -- PRODUCT AND COMPANY IDENTIFICATION  
-----

PRODUCT NAME	RectorSeal No. 5	HMI S CODES	
		Health	1
		Flammability	2
		Reactivity	0
PRODUCT CODES	25790, 25631, 25551, 25431, 25300, 25271, 25191, 25112	PPI	B
CHEMICAL FAMILY:	Organic		
USE	Pipe Thread Sealant		
MANUFACTURER'S NAME	The RectorSeal Corporation 2601 Spenwick Drive Houston, Texas 77055 USA	EMERGENCY TELEPHONE NO.	Chemtrec 24 Hours (800) 424-9300
DATE OF PREPARATION	October 3, 2005	TECHNICAL SERVICE TELEPHONE NO.	(800) 231-3345

-----  
Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS  
-----

% by WT	CAS No.	INGREDIENT	UNITS
20-30	123-42-2	Di acetone Alcohol	
		ACGIH TLV	50 ppm
		OSHA PEL	50 ppm

-----  
Section 3 -- HAZARDS IDENTIFICATION  
-----

## SUMMARY OF ACUTE HAZARDS

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

## ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

## INHALATION

Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

## EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

## SKIN CONTACT

Irritation, dermatitis.

## INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

## SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

## MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

-----  
Section 4 -- FIRST AID MEASURES  
-----

If INHALED:	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
If on SKIN:	Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.
If in EYES:	Flush eyes with large amounts of water for 15 minutes. Get medical attention.
If SWALLOWED:	If swallowed, call a physician immediately. Only induce



CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing.

Temperatures above 500 F (260 C).

INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen, strong oxidizing materials, molten alkali metals.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

-----  
Section 11 -- TOXICOLOGY INFORMATION  
-----

CHRONIC HEALTH HAZARDS

No ingredients in this product is an IARC, NTP or OSHA Listed carcinogen.

TOXICOLOGY DATA

Ingredient Name

Di acetone Alcohol

Oral -Rat	LD50: 4000 mg/kg
Inhalation-Human	TCLo: 100 ppm

-----  
Section 12 -- Ecological Information  
-----

ECOLOGICAL DATA

Ingredient Name

Di acetone Alcohol

Food Chain Concentration Potential	N/A
WATERFOWL TOXICITY	N/A
BOD	N/A
AQUATIC TOXICITY	N/A

-----  
Section 13 -- DISPOSAL CONSIDERATIONS  
-----

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

-----  
Section 14 -- TRANSPORTATION INFORMATION  
-----

DOT: Non-Regulated

OCEAN (IMDG): Non-Regulated

AIR (IATA): Non-Regulated

WHMIS (CANADA): Non-Regulated

-----  
Section 15 -- REGULATORY INFORMATION  
-----

REGULATORY DATA

Ingredient Name

Di acetone Alcohol

SARA 313	N/A
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

-----  
Section 16 -- OTHER INFORMATION  
-----

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# MATERIAL SAFETY DATA SHEET- **RECTORSEEK<sup>®</sup> LOW-TEMP**

MSDS0037  
Ver. No.1  
Ver. Date February 11, 1999

## SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Rectorseek™ Low-Temp

**CHEMICAL FAMILY:** Organic/Inorganic

**USE:** Leak Locator

**MANUFACTURE / SUPPLIER**

The RectorSeal Corporation  
2601 Spenwick  
Houston, Texas 77055 USA

**EMERGENCY TELEPHONE NUMBERS:**

Chemtrec 24 hours: (800) 424-9300  
The RectorSeal Corporation: (713) 263-8001

**NON EMERGENCY TELEPHONE NUMBERS:**

Technical Service: (800) 231-3345

## SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

<u>HAZARDOUS COMPONENTS</u>	<u>CAS NO.</u>	<u>APPROX</u>		<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OTHER LIMITS</u>	<u>HMIS</u>	<u>NFPA</u>
		<u>%</u>	<u></u>					
Propylene Glycol	57-55-6	--		N/D	N/D	N/D	N/D	H0,F1,R0

## SECTION 3 HAZARDS IDENTIFICATION

**SUMMARY OF ACUTE HAZARDS** None known

**ROUTE OF EXPOSURE**

**SIGNS AND SYMPTOMS**

**INHALATION:** Heated vapors may be irritating to respiratory tract.

**EYE CONTACT:** Slight irritation, watering.

**SKIN CONTACT:** Irritation, dermatitis.

**INGESTION:** May cause nausea and vomiting.

**SUMMARY OF CHRONIC HAZARDS:** None known

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** None known

**PRIMARY ROUTE(S)**

No

Yes

Yes

No

## SECTION 4 FIRST AID MEASURES

**INHALATION:** Remove to fresh air. Seek immediate medical attention.

**EYE CONTACT:** Flush eyes with plenty of water. Call a physician if irritation persists.

**SKIN CONTACT:** Wash with soap and water. If irritation occurs, seek medical attention.

**INGESTION:** If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

## SECTION 5 FIRE FIGHTING MEASURES

**FLASH POINT:** None

**FLAMMABILITY LIMITS:** LEL: N/A UEL: N/A

**EXTINGUISHING MEDIA:** Foam, dry chemical, carbon dioxide or water fog.

**SPECIAL FIRE FIGHTING PROCEDURES:** Wear self-contained full face piece breathing apparatus and other protective clothing. Hazardous decomposition products possible (see Section 10).

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Heat may build up and rupture closed containers.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Wipe up spills to prevent footing hazard. Avoid flushing into sewers, drains, waterways and soil. Wear protective clothing during clean up.

## SECTION 7 STORAGE AND HANDLING

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:** Keep container closed when not in use. Do not store near heat, sparks or open flames.

**OTHER PRECAUTIONS:** Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues and vapors; treat as if full and observe all products precautions. Do not reuse empty containers. **KEEP OUT OF REACH OF CHILDREN.**

## SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**RESPIRATORY PROTECTION (SPECIFY TYPE):** Normally none required.

**VENTILATION – LOCAL EXHAUST:** Acceptable

**Special:** N/A

**MECHANICAL (GENERAL):** Acceptable

**OTHER:** N/A

**PROTECTIVE GLOVES:** Wear non-permeable gloves.

**EYE PROTECTION:** Goggles (ANSI Z-87.1 or equivalent)

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Coveralls recommended.

**WORK/HYGIENIC PRACTICES:** Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**BOILING POINT:** 597°F (314°C) @ 760 mm Hg

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 1.12

**VAPOR PRESSURE (mm Hg):** < 0.01 @ 68°F (20°C)

**MELTING POINT:** N/A

**VAPOR DENSITY (AIR = 1):** 6.7

**EVAPORATION RATE (ETHYL ACETATE = 1):** 1

**SOLUBILITY IN WATER:** Soluble

**APPEARANCE/ODOR:** Clear Yellow Liquid/Odorless

MATERIAL SAFETY DATA SHEET- **RECTORSEKÔ LOW-TEMP**

MSDS0037  
Ver. No.1  
Ver. Date February 11, 1999

**SECTION 10 STABILITY AND REACTIVITY**

**STABILITY:** Stable  
**CONDITIONS TO AVOID:** None  
**INCOMPATIBILITY (MATERIALS TO AVOID):** Strong oxidizing materials.  
**HAZARDOUS DECOMPOSITION PRODUCTS:** CO, CO<sub>2</sub>, hydrocarbons.  
**HAZARDOUS POLYMERIZATION:** Will not occur.

**SECTION 11 TOXICOLOGY INFORMATION**

**CARCINOGENICITY:** NTP: No IARC MONOGRAPHS: No OSHA REGULATED: No

<u>SUBSTANCE</u>	<u>CAS NO.</u>	<u>LD50</u>	<u>LC50</u>
Propylene Glycol	57-55-6	Oral-Rat LD50:20 g/kg	N/D

**SECTION 12 ECOLOGICAL INFORMATION**

<u>SUBSTANCE</u>	<u>FOOD CHAIN CON POTENTIAL</u>	<u>WATERFOWL TOXICITY</u>	<u>BOD</u>	<u>AQUATIC TOXICITY</u>
Propylene Glycol	None	N/A	2.2%	N/A

**SECTION 13 DISPOSAL CONSIDERATIONS**

**WASTE DISPOSAL METHOD:** Dispose of clean up materials in accordance with all local, state and federal regulations.

**SECTION 14 TRANSPORTATION INFORMATION**

**DOT:** Non-Regulated  
**OCEAN (IMDG):** Non-Regulated  
**AIR (IATA):** Non-Regulated  
**WHMIS (CANADA):** Non-Regulated

**SECTION 15 REGULATORY INFORMATION**

<u>SUBSTANCE</u>	<u>SARA 313</u>	<u>TSCA INVENTORY</u>	<u>CERCLA RQ</u>	<u>RCRA CODE</u>
Propylene Glycol	No	Yes	N/A	N/A

**SECTION 16 OTHER INFORMATION**

This document is prepared pursuant to the OSHA Hazardous Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, express or implied is made. Consult The RectorSeal Corporation for further information: (713) 263-8001.

## MATERIAL SAFETY DATA SHEET

MSDS 0077

 =====  
 Section 1 -- PRODUCT AND COMPANY IDENTIFICATION  
 -----

	HMIS CODES	
PRODUCT NAME	Health	1
RectorSeal T Plus 2	Flammability	1
	Reactivity	0
PRODUCT CODES	PPI	B
23710, 23631, 23551, 23431, 23391, 23271, 23191, 23112		
CHEMICAL FAMILY:		
Organic		
USE		
Pipe Thread Sealant		
MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.	
The RectorSeal Corporation	Chemtrec 24 Hours	
2601 Spenwick Drive	(800) 424-9300	
Houston, Texas 77055 USA		
VALIDATION DATE	TECHNICAL SERVICE TELEPHONE NO.	
February 10, 2006	(800) 231-3345	
REVISION DATE		
February 10, 2006		

 =====  
 Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS  
 -----

% by WT	CAS No.	INGREDIENT	UNITS
None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.			

 =====  
 Section 3 -- HAZARDS IDENTIFICATION  
 -----

## SUMMARY OF ACUTE HAZARDS

May produce slight to moderate skin and eye irritation.

## ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

## INHALATION

None known.

## EYE CONTACT

Irritation, watering may occur.

## SKIN CONTACT

Frequent or prolonged contact may irritate and cause dermatitis.

## INGESTION

May cause nausea and vomiting. Not expected to produce toxic effects unless large amounts are ingested.

## SUMMARY OF CHRONIC HAZARDS

None known.

## MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin or persons with chemical sensitivity may have increased susceptibility to excessive exposures.

 =====  
 Section 4 -- FIRST AID MEASURES  
 -----

If INHALED:	N/A
If on SKIN:	Wash with soap and water. Seek medical attention if irritation persists.
If in EYES:	Flush with large amounts of water. Get medical attention if irritation persists.
If SWALLOWED:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give





INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen and strong oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

=====  
 Section 11 -- TOXICOLOGY INFORMATION  
 =====

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

TOXICOLOGY DATA

Ingredient Name

-----  
 Oral-Rat                    LD50: N/A  
 Inhalation-Rat            LC50: N/A  
 =====

=====  
 Section 12 -- Ecological Information  
 =====

ECOLOGICAL DATA

Ingredient Name

-----  
 Food Chain Concentration Potential            N/A  
 WATERFOWL TOXICITY                            N/A  
 BOD    N/A  
 AQUATIC TOXICITY                                N/A  
 =====

=====  
 Section 13 -- DISPOSAL CONSIDERATIONS  
 =====

Waste Classification: Non-regulated solid waste

Disposal Method:        Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

=====  
 Section 14 -- TRANSPORTATION INFORMATION  
 =====

DOT:                        Non-Regulated  
 OCEAN (IMDG):            Non-Regulated  
 AIR (IATA):               Non-Regulated  
 WHMIS (CANADA):        Non-Regulated  
 =====

=====  
 Section 15 -- REGULATORY INFORMATION  
 =====

REGULATORY DATA

Ingredient Name

-----  
 SARA 313                    N/A  
 TSCA Inventory            All components listed  
 CERCLA RQ                   N/A  
 RCRA Code                   N/A  
 =====

=====  
 Section 16 -- OTHER INFORMATION  
 =====

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# MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION						
NFPA Rating: Health-1; Flammability-0; Reactivity-0; Specific Hazard-N/A			HMIS Rating: Health-1; Flammability-0; Reactivity-0; Personal Protection-B			
Distributor's Name: Rhomar Water Management, Inc. 2435 N. Patterson Springfield, MO 65801; (417) 862-2600			DOT Hazard Classification: Non-hazardous			
Date Prepared: 4/9/09 Prepared By: DEN			MSDS Number: 922 Revision: 4			
EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300			NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA			
SECTION 1 – MATERIAL IDENTIFICATION AND INFORMATION						
COMPONENTS – CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)		CAS Number	SARA III List	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source**
This product contains non-hazardous components						
SECTION 2 – PHYSICAL/CHEMICAL CHARACTERISTICS						
Boiling Point: 100°C			Specific Gravity (H2O=1): 1.01			
Vapor Pressure: PSIG @ 70°F (Aerosols): N/A			Vapor Pressure (Non-aerosols)(mm Hg and Temperature): Not known			
Vapor Density (Air=1): Not known			Evaporation Rate (Water=1): 1.0			
Solubility in Water: Complete			Water Reactive: No			
Appearance and Odor: Clear, blue liquid, little or no odor.			PH (neat solution): 8.0 – 9.0			
SECTION 3 – FIRE AND EXPLOSION HAZARD DATA						
FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols): N/A		Auto Ignition Temperature N/A		Flammability Limits in Air by % in Volume: % LEL: N/A % UEL: N/A		
FLASH POINT AND METHOD USED (non-aerosols): Non-combustible			EXTINGUISHER MEDIA: Non-combustible. Use media compatible with surrounding fire.			
SPECIAL FIRE FIGHTING PROCEDURES: None required						
Unusual Fire & Explosion Hazards: None						
SECTION 4 – REACTIVITY HAZARD DATA						
STABILITY (X) Stable ( ) Unstable			HAZARDOUS POLYMERIZATION ( ) WILL OCCUR (X) WILL NOT OCCUR			
Incompatibility (materials to avoid): None			Conditions to Avoid: None known.			
Hazardous Decomposition Products: None						
SECTION 5 – HEALTH HAZARD DATA						
PRIMARY ROUTES OF ENTRY ( ) INHALATION ( ) INGESTION ( ) SKIN ABSORPTION ( ) EYE (X) NOT HAZARDOUS						
ACUTE EFFECTS:						
INHALATION: Not likely – no adverse effects.						
EYE CONTACT: May cause slight irritation.			SKIN CONTACT: None			
INGESTION: May cause gastrointestinal irritation.						
CHRONIC EFFECTS: None known.						
Medical Conditions Generally Aggravated by Exposure: None identified.						
EMERGENCY FIRST AID PROCEDURES						
Eye Contact: Irrigate with water for 15 minutes.						
Skin Contact: Wash off and rinse thoroughly with water.						
Inhalation: Move to fresh air.						
Ingestion: DO NOT INDUCE VOMITING. Drink 3-4 glasses of water followed by clear water. Get immediate medical attention.						
SECTION 6 – CONTROL AND PROTECTIVE EQUIPMENT						
Respiratory Protection (specify type): None required.						
Protective Gloves: Rubber, if desired.			Eye Protection: Goggles or face shield, if desired.			
Ventilation Requirements: None required.						
Other Protective Clothing and Equipment: Rubber boots and apron if desired. Eyewash stations and safety showers.						
Hygienic Work Practices: Do not eat or drink in work areas. Wash hands before using restroom facilities.						
SECTION 7 – PRECAUTIONS FOR SAFE HANDLING AND USE						
Steps To Be Taken If Material Is Spilled Or Released: Dilute with water and wash down the drain into the sewer system. This product is rapidly biodegradable.						
Waste Disposal Methods: Dispose of in accordance with all local, state and federal regulations.						
Precautions To Be Taken In Handling and Storage: Store in original shipping container. Keep container sealed when not in use. Protect from freezing.						
Other Precautions and/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.						

The statements, technical information and recommendations contained herein are believed reliable, but are given without warranty or guarantee of any kind.

\*\* Chemical Listed as Carcinogen or Potential Carcinogen: (a) NTP (b) IARC Monograph (c) OSHA (d) Not Listed (e) Animal Data Only



# MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION					
NFPA Rating: Health-1; Flammability-0; Reactivity-0; Specific Hazard-N/A			HMIS Rating: Health-1; Flammability-0; Reactivity-0; Personal Protection-B		
Distributor's Name: <b>Rhomar Water Management, Inc.</b> 2435 N. Patterson Springfield, MO 65801; (417) 862-2600			DOT Hazard Classification: Non-hazardous Identity (trade name as used on label): <b>EnviroGard Ultra</b>		
Date Prepared: 02/27/09		Prepared By: DEN		MSDS Number: NA Revision: 1	
EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300			NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA		
SECTION 1 – MATERIAL IDENTIFICATION AND INFORMATION					
COMPONENTS – CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	SARA III List	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source**
Non hazardous per 21CFR1910.1200					
SECTION 2 – PHYSICAL/CHEMICAL CHARACTERISTICS					
Boiling Point: 100°C			Specific Gravity (H2O=1): 1.04		
pH (neat solution): 9.0-10.0			Vapor Pressure (Non-aerosols)(mm Hg and Temperature): Not known		
Vapor Density (Air=1): Not known			Evaporation Rate (Water=1): 1.0		
Solubility in Water: Complete			Water Reactive: No		
Appearance and Odor: Clear, green liquid, little or no odor.					
SECTION 3 – FIRE AND EXPLOSION HAZARD DATA					
FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols): N/A		Auto Ignition Temperature N/A		Flammability Limits in Air by % in Volume: % LEL: N/A % UEL: N/A	
FLASH POINT AND METHOD USED (non-aerosols): Non-combustible			EXTINGUISHER MEDIA: Non-combustible. Use media compatible with surrounding fire.		
SPECIAL FIRE FIGHTING PROCEDURES: None required					
Unusual Fire & Explosion Hazards: None					
SECTION 4 – REACTIVITY HAZARD DATA					
STABILITY (X) Stable ( ) Unstable			HAZARDOUS POLYMERIZATION ( ) WILL (X) WILL NOT OCCUR		
Incompatibility (materials to avoid): None			Conditions to Avoid: None known.		
Hazardous Decomposition Products: None					
SECTION 5 – HEALTH HAZARD DATA					
PRIMARY ROUTES OF ENTRY ( ) INHALATION ( ) INGESTION ( ) SKIN ABSORPTION ( ) EYE (X) NOT HAZARDOUS					
ACUTE EFFECTS:					
INHALATION: Not likely – no adverse effects.					
EYE CONTACT: May cause slight irritation.			SKIN CONTACT: None		
INGESTION: May cause gastrointestinal irritation.					
CHRONIC EFFECTS: None known.					
Medical Conditions Generally Aggravated by Exposure: None identified.					
EMERGENCY FIRST AID PROCEDURES					
Eye Contact: Irrigate with water for 15 minutes.					
Skin Contact: Wash off and rinse thoroughly with water.					
Inhalation: Move to fresh air.					
Ingestion: DO NOT INDUCE VOMITING. Drink 3-4 glasses of water followed by clear water. Get immediate medical attention. Note to Physician: Contains Propylene Glycol and phosphate corrosion inhibitors					
SECTION 6 – CONTROL AND PROTECTIVE EQUIPMENT					
Respiratory Protection (specify type): None required.					
Protective Gloves: Rubber, if desired.			Eye Protection: Goggles or face shield, if desired.		
Ventilation Requirements: None required.					
Other Protective Clothing and Equipment: Rubber boots and apron if desired. Eyewash stations and safety showers.					
Hygienic Work Practices: Do not eat or drink in work areas. Wash hands before using restroom facilities.					
SECTION 7 – PRECAUTIONS FOR SAFE HANDLING AND USE					
Steps To Be Taken If Material Is Spilled Or Released: Dilute with water and wash down the drain into the sewer system. This product is rapidly biodegradable.					
Waste Disposal Methods: Dispose of in accordance with all local, state and federal regulations.					
Precautions To Be Taken In Handling and Storage: Store in original shipping container. Keep container sealed when not in use. Protect from freezing.					
Other Precautions and/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.					

The statements, technical information and recommendations contained herein are believed reliable, but are given without warranty or guarantee of any kind.

\*\* Chemical Listed as Carcinogen or Potential Carcinogen: (a) NTP (b) IARC Monograph (c) OSHA (d) Not Listed (e) Animal Data Only



## MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION						
NFPA Rating: Health-2; Flammability-1; Reactivity-0; Specific Hazard-N/A			HMIS Rating: Health-2; Flammability-1; Reactivity-0; Personal Protection-B			
Distributor's Name: <b>Rhomar Water Management, Inc.</b> 2435 N. Patterson Springfield, MO 65801; (417) 862-2600			DOT Hazard Classification: Non-hazardous  Identity (trade name as used on label): <b>Hydro-Solv 9100</b>			
Date Prepared: 01/25/04		Prepared By: DEN		MSDS Number: 9100 Revision: 4		
EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300			NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA			
SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION						
COMPONENTS - CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)		CAS Number	SARA III List	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source**
All hazardous components < 1%			NO	N/A	N/A	d
SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS						
Boiling Point: 100°C			Specific Gravity (H2O=1): 1.02			
Vapor Pressure: PSIG @ 70°F (Aerosols): N/A			Vapor Pressure (Non-aerosols)(mm Hg and Temperature): Not known			
Vapor Density (Air=1): Not known			Evaporation Rate (Water=1): 1.0			
Solubility in Water: Complete			Water Reactive: No			
Appearance and Odor: Clear red liquid with slight odor						
SECTION 3 - FIRE AND EXPLOSION HAZARD DATA						
FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols): N/A		Auto Ignition Temperature N/A		Flammability Limits in Air by % in Volume: % LEL: N/A % UEL: N/A		
FLASH POINT AND METHOD USED (non-aerosols): Non-combustible			EXTINGUISHER MEDIA: Non-combustible. Use media compatible with surrounding fire.			
SPECIAL FIRE FIGHTING PROCEDURES: None required						
Unusual Fire & Explosion Hazards: None						
SECTION 4 - REACTIVITY HAZARD DATA						
STABILITY (X) Stable ( ) Unstable			HAZARDOUS POLYMERIZATION ( ) WILL OCCUR (X) WILL NOT OCCUR			
Incompatibility (materials to avoid): None			Conditions to Avoid: None known.			
Hazardous Decomposition Products: None						
SECTION 5 - HEALTH HAZARD DATA						
PRIMARY ROUTES OF ENTRY ( ) INHALATION ( ) INGESTION (X) SKIN ABSORPTION (X) EYE ( ) NOT HAZARDOUS						
ACUTE EFFECTS: May irritate skin and eyes.						
INHALATION: Not likely - mists may irritate mucous membranes						
EYE CONTACT: May cause irritation.			SKIN CONTACT: May cause irritation.			
INGESTION: May cause gastrointestinal irritation. Contains slight amounts of inorganic and organic alkaline compounds.						
CHRONIC EFFECTS: None known.						
Medical Conditions Generally Aggravated by Exposure: None identified.						
EMERGENCY FIRST AID PROCEDURES						
Eye Contact: Irrigate with water for 15 minutes.						
Skin Contact: Wash off and rinse thoroughly with water.						
Inhalation: Move to fresh air.						
Ingestion: DO NOT INDUCE VOMITING. Drink 3-4 glasses of water followed by clear water. Get immediate medical attention.						
SECTION 6 - CONTROL AND PROTECTIVE EQUIPMENT						
Respiratory Protection (specify type): None required.						
Protective Gloves: Rubber, if desired.			Eye Protection: Safety glasses or chemical goggles.			
Ventilation Requirements: None required.						
Other Protective Clothing and Equipment: Rubber boots and apron if desired. Eyewash stations and safety showers.						
Hygienic Work Practices: Do not eat or drink in work areas. Wash hands before using restroom facilities.						
SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE						
Steps To Be Taken If Material Is Spilled Or Released: Dilute with water and wash down the drain into the sewer system. This product is rapidly biodegradable.						
Waste Disposal Methods: Dispose of in accordance with all local, state and federal regulations.						
Precautions To Be Taken In Handling and Storage: Store in original shipping container. Keep container sealed when not in use. Protect from freezing.						
Other Precautions and/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.						

The statements, technical information and recommendations contained herein are believed reliable, but are given without warranty or guarantee of any kind.

\*\* Chemical Listed as Carcinogen or Potential Carcinogen: (a) NTP (b) IARC Monograph (c) OSHA (d) Not Listed (e) Animal Data Only





# MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION						
NFPA Rating: Health-1; Flammability-0; Reactivity-0; Specific Hazard-N/A			HMIS Rating: Health-1; Flammability-0; Reactivity-0; Personal Protection-B			
Distributor's Name: <b>Rhomar Water Management, Inc.</b> 2435 N. Patterson Springfield, MO 65801; (417) 862-2600			DOT Hazard Classification: Non-hazardous Identity (trade name as used on label): <b>RhoGard Ultra</b>			
Date Prepared: 08/22/08		Prepared By: DEN		MSDS Number: NA Revision: 1		
EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300			NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA			
SECTION 1 – MATERIAL IDENTIFICATION AND INFORMATION						
COMPONENTS – CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)		CAS Number	SARA III List	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source**
Non hazardous per 21CFR1910.1200						
SECTION 2 – PHYSICAL/CHEMICAL CHARACTERISTICS						
Boiling Point: 100°C			Specific Gravity (H2O=1): 1.03			
pH (neat solution): 7.5-8.5			Vapor Pressure (Non-aerosols)(mm Hg and Temperature): Not known			
Vapor Density (Air=1): Not known			Evaporation Rate (Water=1): 1.0			
Solubility in Water: Complete			Water Reactive: No			
Appearance and Odor: Clear, blue liquid, little or no odor.						
SECTION 3 – FIRE AND EXPLOSION HAZARD DATA						
FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols): N/A		Auto Ignition Temperature N/A		Flammability Limits in Air by % in Volume: % LEL: N/A % UEL: N/A		
FLASH POINT AND METHOD USED (non-aerosols): Non-combustible			EXTINGUISHER MEDIA: Non-combustible. Use media compatible with surrounding fire.			
SPECIAL FIRE FIGHTING PROCEDURES: None required						
Unusual Fire & Explosion Hazards: None						
SECTION 4 – REACTIVITY HAZARD DATA						
STABILITY (X) Stable ( ) Unstable			HAZARDOUS POLYMERIZATION ( ) WILL (X) WILL NOT OCCUR			
Incompatibility (materials to avoid): None			Conditions to Avoid: None known.			
Hazardous Decomposition Products: None						
SECTION 5 – HEALTH HAZARD DATA						
PRIMARY ROUTES OF ENTRY ( ) INHALATION ( ) INGESTION ( ) SKIN ABSORPTION ( ) EYE (X) NOT HAZARDOUS						
ACUTE EFFECTS:						
INHALATION: Not likely – no adverse effects.						
EYE CONTACT: May cause slight irritation.			SKIN CONTACT: None			
INGESTION: May cause gastrointestinal irritation.						
CHRONIC EFFECTS: None known.						
Medical Conditions Generally Aggravated by Exposure: None identified.						
EMERGENCY FIRST AID PROCEDURES						
Eye Contact: Irrigate with water for 15 minutes.						
Skin Contact: Wash off and rinse thoroughly with water.						
Inhalation: Move to fresh air.						
Ingestion: DO NOT INDUCE VOMITING. Drink 3-4 glasses of water followed by clear water. Get immediate medical attention. Note to Physician: Contains pH neutralized Propylene Glycol and corrosion inhibitors						
SECTION 6 – CONTROL AND PROTECTIVE EQUIPMENT						
Respiratory Protection (specify type): None required.						
Protective Gloves: Rubber, if desired.			Eye Protection: Goggles or face shield, if desired.			
Ventilation Requirements: None required.						
Other Protective Clothing and Equipment: Rubber boots and apron if desired. Eyewash stations and safety showers.						
Hygienic Work Practices: Do not eat or drink in work areas. Wash hands before using restroom facilities.						
SECTION 7 – PRECAUTIONS FOR SAFE HANDLING AND USE						
Steps To Be Taken If Material Is Spilled Or Released: Dilute with water and wash down the drain into the sewer system. This product is rapidly biodegradable.						
Waste Disposal Methods: Dispose of in accordance with all local, state and federal regulations.						
Precautions To Be Taken In Handling and Storage: Store in original shipping container. Keep container sealed when not in use. Protect from freezing.						
Other Precautions and/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.						

The statements, technical information and recommendations contained herein are believed reliable, but are given without warranty or guarantee of any kind.

\*\* Chemical Listed as Carcinogen or Potential Carcinogen: (a) NTP (b) IARC Monograph (c) OSHA (d) Not Listed (e) Animal Data Only



# MATERIAL SAFETY DATA SHEET

This MSDS complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200 and OSHA Form 174

IDENTITY AND MANUFACTURER'S INFORMATION					
NFPA Rating: Health-1; Flammability-0; Reactivity-0; Specific Hazard-N/A			HMIS Rating: Health-1; Flammability-0; Reactivity-0; Personal Protection-B		
Manufactured By: <b>Rhomar Water Management, Inc.</b> 2435 N. Patterson Springfield, MO 65801; (417) 862-2600			DOT Hazard Classification: Non-hazardous  Identity (trade name as used on label) <b>RhoGard</b>		
Date Prepared: 08/22/06		Prepared By: DEN		MSDS Number: NA Revision: 1	
EMERGENCY RESPONSE NUMBER: CHEMTREC (800) 424-9300			NOTICE: JUDGEMENT BASED ON INDIRECT TEST DATA		
SECTION 1 – MATERIAL IDENTIFICATION AND INFORMATION					
COMPONENTS – CHEMICAL NAMES AND COMMON NAMES (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	CAS Number	SARA III List	OSHA PEL (ppm)	ACGIH TLV (ppm)	Carcinogen Ref. Source**
Non hazardous per 21CFR1910.1200					
SECTION 2 – PHYSICAL/CHEMICAL CHARACTERISTICS					
Boiling Point: 100°C			Specific Gravity (H2O=1): 1.02		
pH (neat solution): 7.0-8.0			Vapor Pressure (Non-aerosols)(mm Hg and Temperature): Not known		
Vapor Density (Air=1): Not known			Evaporation Rate (Water=1): 1.0		
Solubility in Water: Complete			Water Reactive: No		
Appearance and Odor: Clear, blue liquid, little or no odor.					
SECTION 3 – FIRE AND EXPLOSION HAZARD DATA					
FLAMMABILITY as per USA FLAME PROJECTION TEST (aerosols): N/A		Auto Ignition Temperature N/A		Flammability Limits in Air by % in Volume: % LEL: N/A % UEL: N/A	
FLASH POINT AND METHOD USED (non-aerosols): Non-combustible			EXTINGUISHER MEDIA: Non-combustible. Use media compatible with surrounding fire.		
SPECIAL FIRE FIGHTING PROCEDURES: None required					
Unusual Fire & Explosion Hazards: None					
SECTION 4 – REACTIVITY HAZARD DATA					
STABILITY (X) Stable ( ) Unstable			HAZARDOUS POLYMERIZATION ( ) WILL (X) WILL NOT OCCUR		
Incompatibility (materials to avoid): None			Conditions to Avoid: None known.		
Hazardous Decomposition Products: None					
SECTION 5 – HEALTH HAZARD DATA					
PRIMARY ROUTES OF ENTRY ( ) INHALATION ( ) INGESTION ( ) SKIN ABSORPTION ( ) EYE (X) NOT HAZARDOUS					
ACUTE EFFECTS:					
INHALATION: Not likely – no adverse effects.					
EYE CONTACT: May cause slight irritation.			SKIN CONTACT: None		
INGESTION: Ingestion of undiluted product may cause gastrointestinal irritation.					
CHRONIC EFFECTS: None known.					
Medical Conditions Generally Aggravated by Exposure: None identified.					
EMERGENCY FIRST AID PROCEDURES					
<b>Eye Contact:</b> Irrigate with water for 15 minutes.					
<b>Skin Contact:</b> Wash off and rinse thoroughly with water.					
<b>Inhalation:</b> Move to fresh air.					
<b>Ingestion: DO NOT INDUCE VOMITING.</b> Drink 3-4 glasses of water followed by clear water. Get immediate medical attention. Note to Physician: Contains pH neutralized Propylene Glycol and azole type corrosion inhibitors					
SECTION 6 – CONTROL AND PROTECTIVE EQUIPMENT					
Respiratory Protection (specify type): None required.					
Protective Gloves: Rubber, if desired.			Eye Protection: Goggles or face shield, if desired.		
Ventilation Requirements: None required.					
Other Protective Clothing and Equipment: Rubber boots and apron if desired. Eyewash stations and safety showers.					
Hygienic Work Practices: Do not eat or drink in work areas. Wash hands before using restroom facilities.					
SECTION 7 – PRECAUTIONS FOR SAFE HANDLING AND USE					
Steps To Be Taken If Material is Spilled Or Released: Dilute with water and wash down the drain into the sewer system. This product is rapidly biodegradable.					
Waste Disposal Methods: Dispose of in accordance with all local, state and federal regulations.					
Precautions To Be Taken In Handling and Storage: Store in original shipping container. Keep container sealed when not in use. Protect from freezing.					
Other Precautions and/or Special Hazards: KEEP OUT OF REACH OF CHILDREN.					

The statements, technical information and recommendations contained herein are believed reliable, but are given without warranty or guarantee of any kind.

\*\* Chemical Listed as Carcinogen or Potential Carcinogen: (a) NTP (b) IARC Monograph (c) OSHA (d) Not Listed (e) Animal Data Only





Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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- **Inhalation:**  
This product has low volatility and so is not expected to cause respiratory tract irritation during normal conditions of use. Exposure to high mist levels in poorly ventilated areas may cause upper respiratory tract irritation and difficulty breathing.
- **Ingestion:**  
Ingestion may cause slight stomach irritation and discomfort.
- **Potential Chronic Health Effects**  
No further data known.
- **Medical Conditions Aggravated By Exposure:**  
No further data known.
- **Carcinogenicity:**  
This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

**HMIS RATING:**

Health	Flammability	Reactivity	PPE
1	1	0	X

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**Section 3 – Composition / Information On Ingredients**

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Components listed in this section may contribute to the potential hazards associated with exposure to the concentrate. The product may contain additional non-hazardous or trade secret components.

<u>Component:</u>	<u>CAS #</u>	<u>% By Weight</u>
Mineral Oil	64742-54-7	> 95
Sulfur Additive Package	Mixture	< 5

**This product does not contain silicone.**

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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### Section 4 – First Aid Measures

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#### EYE CONTACT:

Upon direct eye contact, hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. If irritation is due to exposure to mist or vapors, remove the individual to fresh air. If irritation persists, flush the eyes with clean water until the irritation subsides. If symptoms persist, contact a physician.

#### SKIN CONTACT:

Remove product from the skin by washing with a mild soap and water. Contaminated clothing should be removed to prevent prolonged exposure. If symptoms of exposure persist, contact a physician.

#### INHALATION:

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs, remove the employee to fresh air. Contact a physician or other medical professional if irritation or distress persists.

#### INGESTION:

If small amounts are ingested, first aid measures are not likely to be necessary. If larger amounts are ingested or if symptoms of ingestion occur, dilute stomach contents with two glasses of water or milk. (NOTE: Do NOT give anything by mouth to an unconscious person.) Do not induce vomiting without medical supervision. If vomiting occurs spontaneously, keep airway clear. If symptoms of ingestion persist, seek medical attention.

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### Section 5 – Fire Fighting Measures

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#### FIRE AND EXPLOSIVE PROPERTIES:

Flashpoint.....:	385°F Cleveland Open Cup
Flammability Limits.....:	LEL - N/A
	UEL - N/A

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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**EXTINGUISH MEDIA:**

In accordance with NFPA guidance, dry chemical, foam or CO2 fire extinguishers are all acceptable. Note that while water fog extinguishers are also acceptable, do NOT apply a direct stream of water onto burning product because it may cause spreading and increase fire intensity.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

No further data known.

**FIRE-FIGHTING PROCEDURES AND EQUIPMENT:**

Emergency responders in the danger area should wear bunker gear and self-contained breathing apparatus for fires beyond the incipient stage. See Section 8 of the MSDS for other PPE to be worn as conditions warrant.

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**Section 6 – Accidental Release Measures**

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**PERSONAL PRECAUTIONS:**

Use personal protection recommended in Section 8.

**ENVIRONMENTAL:**

This material is a water pollutant. Do not let spilled or leaking material enter waterways.

**CLEAN-UP MEASURES:**

Important: As with any spill or leak, before responding, ensure that you are familiar with the potential hazards and recommendations of the MSDS. Appropriate personal protective equipment must be worn.

If possible, safely contain the spill with dikes or other spill response equipment appropriate for petroleum or organic material releases. Take measures to prevent spreading of product. Note that while product will ignite, it will not readily burn. However, as a precaution, eliminate ignition sources. Prevent from entering sewers or waterways. Large volumes may be transferred to an appropriate container for proper disposal. Small volumes or residues may be soaked up with absorbents. Spill response materials should be collected for proper disposal.



Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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**Section 7 – Handling And Storage**

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**HANDLING:**

As with any industrial chemical, handle the product in a manner that minimizes exposure to practicable levels. Prior to handling, consult Section 8 of this MSDS to evaluate personal protective equipment needs. Open containers slowly to relieve any pressure. Follow all other standard industrial hygiene practices.

Empty containers may contain product residue. All safety precautions taken when handling this product should also be taken when handling empty drums and containers. Keep containers closed when not in use.

Product residue in empty containers is combustible but will not readily burn. Note, however, that excessive heating or cutting of empty containers may create an ignition source sufficient to start a fire and, in extreme cases, cause an explosion.

**STORAGE:**

Protect product quality by storing indoors and away from extreme temperatures. Close all containers when not in use.

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**Section 8 – Exposure Controls / Personal Protection**

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**EXPOSURE GUIDELINES:**

## Component

Mineral Oil	ACGIH TLV: ACGIH STEL: OSHA PEL:	5 mg / m <sup>3</sup> (as mist) 10 mg / m <sup>3</sup> (as mist) 5 mg / m <sup>3</sup> (as mist)
Sulfur Additive Package	No information	

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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#### ENGINEERING CONTROLS:

Normal general ventilation is expected to be adequate. It is recommended that ventilation be designed in all instances to maintain airborne concentrations at lowest practicable levels. Ventilation should, at a minimum, prevent airborne concentrations from exceeding any exposure limits.

The user may wish to refer to 29 CFR 1910.1000(d) (2) and the ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" (Appendix C) for the determination of exposure limits of mixtures. An industrial hygienist or similar professional may be consulted to confirm that the calculated exposure limits apply.

#### PERSONAL PROTECTIVE EQUIPMENT:

Selection of personal protective equipment should be based upon the anticipated exposure and made in accordance with OSHA's Personal Protective Equipment Standard found in 29 CFR 1910 Subpart I. The following information may be used to assist in PPE selection.

- **Eye Protection**  
Wear eye protection appropriate to prevent eye exposure. Where splashing is not likely, chemical safety glasses with side shields are recommended. Where splashing may occur, chemical goggles or full face shield is recommended.
- **Skin Protection**  
Gloves are not normally needed during normal conditions of use. If health effects are experienced, oil or chemical resistant gloves such as butyl or nitrile are recommended. Where splashing or soaking is likely, wear oil or chemical resistant clothing to prevent exposure.
- **Respiratory Protection**  
A respirator may be worn to reduce exposure to vapors, dust or mist. Select a NIOSH/MSHA approved respirator appropriate for the type and physical character of the airborne material. A self-contained breathing apparatus is recommended in all situations where airborne contaminant concentration has not been confirmed to be below safe levels. Respirator use should comply with the OSHA Respirator Protection Standard found in 29 CFR 1910.134.
- **General Hygiene Considerations**  
Wash thoroughly after handling.

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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### Section 9 – Physical And Chemical Properties

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Physical Appearance.....: Clear Yellow  
Odor.....: Mild Petroleum  
Physical State.....: Liquid  
Water Solubility.....: Insoluble  
Specific Gravity.....: .878  
VOC.....: 2%

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### Section 10 – Stability And Reactivity

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#### STABILITY:

This product is stable at room temperature.

#### CONDITIONS TO AVOID:

Avoid contact with incompatible materials and exposure to extreme temperatures.

#### INCOMPATIBLE MATERIALS:

This product is incompatible with strong oxidizing agents.

#### DECOMPOSITION PRODUCTS MAY INCLUDE:

Thermal decomposition products are dependent on combustion conditions. A complex mixture of airborne solid, liquid, particulates and gasses may evolve when the material burns. Combustion by-products may include:

oxides of carbon

oxides of sulfur

incompletely burned hydrocarbons as fumes and smoke

#### POSSIBILITY OF HAZARDOUS REACTIONS:

This product is not expected to polymerize

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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### **Section 11 – Toxicological Information**

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**ACUTE:**

Oral LD<sub>50</sub>: Not determined

Inhalation LC<sub>50</sub>: Not determined

**CHRONIC:** No further toxicological data known.

**SENSITIZATION:** No further toxicological data known.

**REPRODUCTIVE EFFECTS:** No further toxicological data known.

**TERATOGENIC EFFECTS:** No further toxicological data known.

**MUTAGENICITY:** No further toxicological data known.

**SYNERGISTIC MATERIALS:** No further toxicological data known.

**CARCINOGENICITY:** This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

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### **Section 12 – Ecological Information**

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**ECOTOXICOLOGICAL INFORMATION:**

This product has not been evaluated for ecotoxicity. As with any industrial chemical, exposure to the environment should be prevented and minimized wherever possible.

**ENVIRONMENTAL FATE:**

The degree of biodegradability and persistence of this product has not been determined.

**VOC CONTENT:**

2%

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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**Section 13 – Disposal Consideration**

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**WASTE DISPOSAL:**

Ensure that collection, transport, treatment and disposal of waste product and containers complies with all applicable laws and regulations. Note that use, mixture, processing or contamination of the product may cause the material to be classified as a hazardous waste. It is the responsibility of the product user or owner to determine at the time of disposal whether the product is regulated as a hazardous waste.

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**Section 14 – Transportation Information**

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**U.S. DOT HAZARDOUS MATERIAL INFORMATION:**

Not DOT regulated.

**CANADA TRANSPORT OF DANGEROUS GOODS:**

This material is not TDG regulated.

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**Section 15 – Regulatory Information**

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**FEDERAL REGULATIONS:****SARA 313:**

This product contains NONE of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

**CLEAN WATER ACT:**

This product contains mineral oil and is subject to regulation by Section 311 of the Clean Water Act and the Oil Pollution Act. Releases of the product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802.

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

---

**CERCLA REPORTABLE QUANTITY:**

Any components listed below have been assigned a reportable quantity (RQ) by the Federal EPA. Releases of the product into the environment that exceed the RQ for a particular component must be reported to the National Response Center at 1-800-424-8802.

None to report

**TOXIC SUBSTANCE CONTROL ACT:**

The components of this product are listed on the TSCA Inventory.

**OZONE DEPLETING SUBSTANCES:**

This product contains no ozone depleting substances as defined by the Clean Air Act.

**HAZARDOUS AIR POLLUTANTS:**

Any components listed below are defined by the Federal EPA as hazardous air pollutants:

None to report

**STATE REGULATIONS**

This product contains mineral oil, and as used, may be regulated by state used oil regulations. Check with the appropriate state agency to determine whether such a regulation exists.

**CANADA**

WHMIS Classification: Not controlled under WHMIS

**DSL:**

The components of this product are listed on DSL Inventory.

Product Name.....: RIDGID Nu-Clear Thread Cutting Oil

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**Section 16 – Other Information**

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Prepared by:..... Ridge Tool Company

Issue Date: ..... September 30, 2009

Last Revision Date: ..... September 30, 2009

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Product Name.....: RIDGID Dark Thread Cutting Oil

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- Ingestion:  
Ingestion may cause slight stomach irritation and discomfort.
- Potential Chronic Health Effects  
No further data known.
- Medical Conditions Aggravated By Exposure:  
No further data known.
- Carcinogenicity:  
This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

HMIS RATING:

Health	Flammability	Reactivity	PPE
1	1	0	X

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**Section 3 – Composition / Information On Ingredients**

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Components listed in this section may contribute to the potential hazards associated with exposure to the concentrate. The product may contain additional non-hazardous or trade secret components.

<u>Component:</u>	<u>CAS #</u>	<u>% By Weight</u>
Mineral Oil	64742-54-7	> 90
Sulfur Additive Package	Mixture	< 10

**This product does not contain silicone.**

Product Name.....: RIDGID Dark Thread Cutting Oil

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### Section 4 – First Aid Measures

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#### EYE CONTACT:

Upon direct eye contact, hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. If irritation is due to exposure to mist or vapors, remove the individual to fresh air. If irritation persists, flush the eyes with clean water until the irritation subsides. If symptoms persist, contact a physician.

#### SKIN CONTACT:

Remove product from the skin by washing with a mild soap and water. Contaminated clothing should be removed to prevent prolonged exposure. If symptoms of exposure persist, contact a physician.

#### INHALATION:

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs, remove the employee to fresh air. Contact a physician or other medical professional if irritation or distress persists.

#### INGESTION:

If small amounts are ingested, first aid measures are not likely to be necessary. If larger amounts are ingested or if symptoms of ingestion occur, dilute stomach contents with two glasses of water or milk. (NOTE: Do NOT give anything by mouth to an unconscious person.) Do not induce vomiting without medical supervision. If vomiting occurs spontaneously, keep airway clear. If symptoms of ingestion persist, seek medical attention.

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### Section 5 – Fire Fighting Measures

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#### FIRE AND EXPLOSIVE PROPERTIES:

Flashpoint.....: 385°F Cleveland Open Cup  
Flammability Limits.....: LEL - N/A  
UEL - N/A

Product Name.....: RIDGID Dark Thread Cutting Oil

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**EXTINGUISH MEDIA:**

In accordance with NFPA guidance, dry chemical, foam or CO2 fire extinguishers are all acceptable. Note that while water fog extinguishers are also acceptable, do NOT apply a direct stream of water onto burning product because it may cause spreading and increase fire intensity.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

No further data known.

**FIRE-FIGHTING PROCEDURES AND EQUIPMENT:**

Emergency responders in the danger area should wear bunker gear and self-contained breathing apparatus for fires beyond the incipient stage. See Section 8 of the MSDS for other PPE to be worn as conditions warrant.

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**Section 6 – Accidental Release Measures**

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**PERSONAL PRECAUTIONS:**

Use personal protection recommended in Section 8.

**ENVIRONMENTAL:**

This material is a water pollutant. Do not let spilled or leaking material enter waterways.

**CLEAN-UP MEASURES:**

Important: As with any spill or leak, before responding, ensure that you are familiar with the potential hazards and recommendations of the MSDS. Appropriate personal protective equipment must be worn.

If possible, safely contain the spill with dikes or other spill response equipment appropriate for petroleum or organic material releases. Take measures to prevent spreading of product. Note that while product will ignite, it will not readily burn. However, as a precaution, eliminate ignition sources. Prevent from entering sewers or waterways. Large volumes may be transferred to an appropriate container for proper disposal. Small volumes or residues may be soaked up with absorbents. Spill response materials should be collected for proper disposal.

Product Name.....: RIDGID Dark Thread Cutting Oil

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## Section 7 – Handling And Storage

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### HANDLING:

As with any industrial chemical, handle the product in a manner that minimizes exposure to practicable levels. Prior to handling, consult Section 8 of this MSDS to evaluate personal protective equipment needs. Open containers slowly to relieve any pressure. Follow all other standard industrial hygiene practices.

Empty containers may contain product residue. All safety precautions taken when handling this product should also be taken when handling empty drums and containers. Keep containers closed when not in use.

Product residue in empty containers is combustible but will not readily burn. Note, however, that excessive heating or cutting of empty containers may create an ignition source sufficient to start a fire and, in extreme cases, cause an explosion.

### STORAGE:

Protect product quality by storing indoors and away from extreme temperatures. Close all containers when not in use.

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## Section 8 – Exposure Controls / Personal Protection

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### EXPOSURE GUIDELINES:

#### Component

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Mineral Oil	ACGIH TLV:	5 mg / m <sup>3</sup> (as mist)
	ACGIH STEL:	10 mg / m <sup>3</sup> (as mist)
	OSHA PEL:	5 mg / m <sup>3</sup> (as mist)
Sulfur Additive Package	No information	

Product Name.....: RIDGID Dark Thread Cutting Oil

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#### ENGINEERING CONTROLS:

Normal general ventilation is expected to be adequate. It is recommended that ventilation be designed in all instances to maintain airborne concentrations at lowest practicable levels. Ventilation should, at a minimum, prevent airborne concentrations from exceeding any exposure limits.

The user may wish to refer to 29 CFR 1910.1000(d) (2) and the ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" (Appendix C) for the determination of exposure limits of mixtures. An industrial hygienist or similar professional may be consulted to confirm that the calculated exposure limits apply.

#### PERSONAL PROTECTIVE EQUIPMENT:

Selection of personal protective equipment should be based upon the anticipated exposure and made in accordance with OSHA's Personal Protective Equipment Standard found in 29 CFR 1910 Subpart I. The following information may be used to assist in PPE selection.

- **Eye Protection**  
Wear eye protection appropriate to prevent eye exposure. Where splashing is not likely, chemical safety glasses with side shields are recommended. Where splashing may occur, chemical goggles or full face shield is recommended.
- **Skin Protection**  
Gloves are not normally needed during normal conditions of use. If health effects are experienced, oil or chemical resistant gloves such as butyl or nitrile are recommended. Where splashing or soaking is likely, wear oil or chemical resistant clothing to prevent exposure.
- **Respiratory Protection**  
A respirator may be worn to reduce exposure to vapors, dust or mist. Select a NIOSH/MSHA approved respirator appropriate for the type and physical character of the airborne material. A self-contained breathing apparatus is recommended in all situations where airborne contaminant concentration has not been confirmed to be below safe levels. Respirator use should comply with the OSHA Respirator Protection Standard found in 29 CFR 1910.134.
- **General Hygiene Considerations**  
Wash thoroughly after handling.

Product Name.....: RIDGID Dark Thread Cutting Oil

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### Section 9 – Physical And Chemical Properties

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Physical Appearance:.....: Black  
Odor. ....: Mild Petroleum  
Physical State.....: Liquid  
Water Solubility.....: Insoluble  
Specific Gravity.....: .878

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### Section 10 – Stability And Reactivity

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#### STABILITY:

This product is stable.

#### CONDITIONS TO AVOID:

Avoid contact with incompatible materials and exposure to extreme temperatures.

#### INCOMPATIBLE MATERIALS:

This product is incompatible with strong oxidizing agents.

#### DECOMPOSITION PRODUCTS MAY INCLUDE:

Thermal decomposition products are dependent on combustion conditions. A complex mixture of airborne solid, liquid, particulates and gasses may evolve when the material burns. Combustion by-products may include:

oxides of carbon

oxides of sulfur

incompletely burned hydrocarbons as fumes and smoke

#### POSSIBILITY OF HAZARDOUS REACTIONS:

This product is not expected to polymerize

Product Name.....: RIDGID Dark Thread Cutting Oil

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### Section 11 – Toxicological Information

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**ACUTE:**

Oral LD<sub>50</sub>: Not determined

Inhalation LC<sub>50</sub>: Not determined

**CHRONIC:** No further toxicological data known.

**SENSITIZATION:** No further toxicological data known.

**REPRODUCTIVE EFFECTS:** No further toxicological data known.

**TERATOGENIC EFFECTS:** No further toxicological data known.

**MUTAGENICITY:** No further toxicological data known.

**SYNERGISTIC MATERIALS:** No further toxicological data known.

**CARCINOGENICITY:** This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

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### Section 12 – Ecological Information

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**ECOTOXICOLOGICAL INFORMATION:**

This product has not been evaluated for ecotoxicity. As with any industrial chemical, exposure to the environment should be prevented and minimized wherever possible.

**ENVIRONMENTAL FATE:**

The degree of biodegradability and persistence of this product has not been determined.



Product Name.....: RIDGID Dark Thread Cutting Oil

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**Section 13 – Disposal Consideration**

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**WASTE DISPOSAL:**

Ensure that collection, transport, treatment and disposal of waste product and containers complies with all applicable laws and regulations. Note that use, mixture, processing or contamination of the product may cause the material to be classified as a hazardous waste. It is the responsibility of the product user or owner to determine at the time of disposal whether the product is regulated as a hazardous waste.

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**Section 14 – Transportation Information**

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**U.S. DOT HAZARDOUS MATERIAL INFORMATION:**

Not DOT regulated.

**CANADA TRANSPORT OF DANGEROUS GOODS:**

This material is not TDG regulated.

---

**Section 15 – Regulatory Information**

---

**FEDERAL REGULATIONS:****SARA 313:**

This product contains NONE of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

**CLEAN WATER ACT:**

This product contains mineral oil and is subject to regulation by Section 311 of the Clean Water Act and the Oil Pollution Act. Releases of the product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802.

Product Name.....: RIDGID Dark Thread Cutting Oil

---

**CERCLA REPORTABLE QUANTITY:**

Any components listed below have been assigned a reportable quantity (RQ) by the Federal EPA. Releases of the product into the environment that exceed the RQ for a particular component must be reported to the National Response Center at 1-800-424-8802.

None to report

**TOXIC SUBSTANCE CONTROL ACT:**

The components of this product are listed on the TSCA Inventory.

**OZONE DEPLETING SUBSTANCES:**

This product contains no ozone depleting substances as defined by the Clean Air Act.

**HAZARDOUS AIR POLLUTANTS:**

Any components listed below are defined by the Federal EPA as hazardous air pollutants:

None to report

**STATE REGULATIONS**

This product contains mineral oil, and as used, may be regulated by state used oil regulations. Check with the appropriate state agency to determine whether such a regulation exists.

**CANADA**

WHMIS Classification: Not controlled under WHMIS

**DSL:**

The components of this product are listed on DSL Inventory.

Product Name.....: RIDGID Dark Thread Cutting Oil

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**Section 16 – Other Information**

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Prepared by: . . . . . Ridge Tool Company

Issue Date: . . . . . May 27, 2009

Last Revision Date: . . . . . May 27, 2009

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**13119, 13203, 13204**  
**Premium (High) Vacuum Pump Oil**  
**Material Safety Data Sheet**

SPX Corporation  
 655 Eisenhower Drive  
 Owatonna, MN 55060-0995 USA

**MSDS No.** 634103001  
**Revision Date** 2/10/2006

**IMPORTANT:** Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

Hazard Rankings		
	HMIS	NFPA
Health Hazard	0	0
Fire Hazard	1	1
Reactivity	0	0

\* = Chronic Health Hazard

Emergency Overview	
<b>Physical State</b>	Liquid.
<b>Color</b>	Light amber
<b>Odor</b>	Mild petroleum odor
<b>Protect eyes from misting or spraying material.</b>	
<b>Protect exposed skin from repeated or prolonged exposure.</b>	
<b>Do not store material in open or unmarked containers.</b>	
<b>Spills may create a slipping hazard.</b>	

Protective Equipment
Minimum Recommended See Section 8 for Details


## SECTION 1. PRODUCT IDENTIFICATION

<b>Trade Name</b>	Premium (High) Vacuum Pump Oil	<b>Technical Contact</b>	(800) 248-4684
<b>Product Number</b>	13119, 13203, 13204	<b>Medical Emergency</b>	(832) 486-4700
<b>CAS Number</b>	Mixture.	<b>CHEMTREC Emergency (United States Only)</b>	(800) 424-9300
<b>Product Family</b>	Industrial oil		
<b>Synonyms</b>	Lubricating oil High vacuum pump oil		

## SECTION 2. COMPOSITION

Component Name(s)	CAS Registry No.	Concentration (%)
Distillates, petroleum, solvent-refined heavy paraffinic	64741-88-4	100

## SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

**Major Route(s) of Entry** Skin contact.

### Signs and Symptoms of Acute Exposure

<b>Inhalation</b>	At elevated temperatures or in enclosed spaces, product mist or vapors may irritate the mucous membranes of the nose, the throat, bronchi, and lungs.
<b>Eye Contact</b>	This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling.

**Skin Contact** This material can cause mild skin irritation from prolonged or repeated skin contact. Injection under the skin can cause inflammation and swelling. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage. Initial symptoms may be minor. Injection of petroleum hydrocarbons requires immediate medical attention.

**Ingestion** If swallowed, large volumes of material can cause generalized depression, headache, drowsiness, nausea, vomiting and diarrhea. Smaller doses can cause a laxative effect. If aspirated into the lungs, liquid can cause lung damage.

**Chronic Health Effects Summary** This product contains a petroleum-based mineral oil. Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects.

**Conditions Aggravated by Exposure** Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin

**Target Organs** May cause damage to the following organs: skin.

**Carcinogenic Potential** This product is not known to contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP.

OSHA Health Hazard Classification				OSHA Physical Hazard Classification					
Irritant	<input type="checkbox"/>	Sensitizer	<input type="checkbox"/>	Combustible	<input type="checkbox"/>	Explosive	<input type="checkbox"/>	Pyrophoric	<input type="checkbox"/>
Toxic	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>	Water-reactive	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>	Unstable	<input type="checkbox"/>

## SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

**Inhalation** Vaporization is not expected at ambient temperatures. This material is not expected to cause inhalation-related disorders under anticipated conditions of use. In case of overexposure, move the person to fresh air.

**Eye Contact** Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists.

**Skin Contact** If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately.

**Ingestion** Do not induce vomiting unless directed to by a physician. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. If significant amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.

## Notes to Physician

SKIN: In the event of injection in underlying tissue, immediate treatment should include extensive incision, debridement and saline irrigation. Inadequate treatment can result in ischemia and gangrene. Early symptoms may be minimal.

INGESTION: The viscosity range of the product(s) represented by this MSDS is greater than 100 SUS at 100°F. There is a low risk of aspiration upon ingestion. Careful gastric lavage or emesis may be considered to evacuate large quantities of material.

## SECTION 5. FIRE FIGHTING MEASURES

---

<b>NFPA Flammability Classification</b>	NFPA Class-IIIB combustible material.		
<b>Flash Point</b>	Closed cup: 208°C (406°F). (Pensky-Martens. (Minimum)) Open cup: 215°C (419°F) (Cleveland. (Minimum)).		
<b>Lower Flammable Limit</b>	No data.	<b>Upper Flammable Limit</b>	No data.
<b>Autoignition Temperature</b>	Not available.		
<b>Hazardous Combustion Products</b>	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur and/or nitrogen.		
<b>Special Properties</b>	This material can burn but will not readily ignite. This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, heated vapor can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point.		
<b>Extinguishing Media</b>	Use dry chemical, foam, Carbon Dioxide or water fog. Water or foam may cause frothing. Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces.		
<b>Protection of Fire Fighters</b>	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.		

## SECTION 6. ACCIDENTAL RELEASE MEASURES

---

**Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.**

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulations.

## SECTION 7. HANDLING AND STORAGE

---

<b>Handling</b>	Avoid contamination and extreme temperatures to minimize product degradation. Empty containers may contain product residues that can ignite with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.
<b>Storage</b>	Keep container closed. Do not store with strong oxidizing agents. Do not store at elevated temperatures. Avoid storing product in direct sunlight for extended periods of time. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

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<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see below). An eye wash station and safety shower should be located near the work-station.
<b>Personal Protective Equipment</b>	Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



<b>Eye Protection</b>	Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.
<b>Hand Protection</b>	Use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.
<b>Body Protection</b>	Use clean protective clothing if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.
<b>Respiratory Protection</b>	The need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).



**General Comments** Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.

**Occupational Exposure Guidelines**

<b>Substance</b> Oil Mist, Mineral	<b>Applicable Workplace Exposure Levels</b> <b>ACGIH (United States).</b> TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup> <b>OSHA (United States).</b> TWA: 5 mg/m <sup>3</sup>
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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)**

<b>Physical State</b>	Liquid.	<b>Color</b>	Light amber	<b>Odor</b>	Mild petroleum odor
<b>Specific Gravity</b>	0.87 (Water = 1)	<b>pH</b>	Not applicable	<b>Vapor Density</b>	>1 (Air = 1)
<b>Boiling Range</b>	Not available.			<b>Melting/Freezing Point</b>	Not available.
<b>Vapor Pressure</b>	<0.001 kPa (<0.01 mm Hg) (at 20°C)			<b>Volatility</b>	Negligible volatility.
<b>Solubility in Water</b>	Negligible solubility in cold water.			<b>Viscosity (cSt @ 40°C)</b>	31
<b>Flash Point</b>	Closed cup: 208°C (406°F). (Pensky-Martens. (Minimum)) Open cup: 215°C (419°F) (Cleveland. (Minimum)).				
<b>Additional Properties</b>	Gravity, °API (ASTM D287) = 31.1 @ 60° F Density = 7.25 Lbs/gal. Viscosity (ASTM D2161) = AP 150 SUS @ 100° F				

**SECTION 10. STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Stable.	<b>Hazardous Polymerization</b>	Not expected to occur.
<b>Conditions to Avoid</b>	Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions.		
<b>Materials Incompatibility</b>	Strong oxidizers.		
<b>Hazardous Decomposition Products</b>	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		

**SECTION 11. TOXICOLOGICAL INFORMATION**

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

## Toxicity Data

### Distillates, petroleum, solvent-refined heavy paraffinic :

ORAL (LD50): Acute: >5000 mg/kg [Rat].  
DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].

Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested. Analyses conducted by method IP 346 indicate that the concentration of DMSO extractables in this mineral oil is below 3.0 weight percent.

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

### Environmental Fate

An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products. Petroleum-based (mineral) lubricating oils normally will float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment.

## SECTION 13. DISPOSAL CONSIDERATIONS

**Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.**

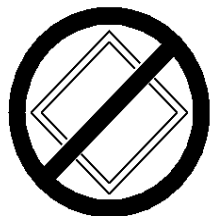
Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a RCRA "hazardous waste" at the time of disposal. Transportation, treatment, storage and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specific disposal issues.

## SECTION 14. TRANSPORT INFORMATION

**The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.**

<b>US DOT Status</b>	Not regulated by the U.S. Department of Transportation as a hazardous material.		
<b>Proper Shipping Name</b>	Not regulated.		
<b>Hazard Class</b>	Not regulated.	<b>Packing Group(s)</b>	Not applicable.
		<b>UN/NA Number</b>	Not regulated.
<b>Reportable Quantity</b>	A Reportable Quantity (RQ) has not been established for this material.		

Placard(s)



Emergency Response  
Guide No.

Not applicable.

MARPOL III Status

Not a DOT "Marine  
Pollutant" per 49 CFR  
171.8.

## SECTION 15. REGULATORY INFORMATION

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<b>TSCA Inventory</b>	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
<b>SARA 302/304 Emergency Planning and Notification</b>	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
<b>SARA 311/312 Hazard Identification</b>	<p>The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories:</p> <p>No SARA 311/312 hazard categories identified.</p>
<b>SARA 313 Toxic Chemical Notification and Release Reporting</b>	This product contains the following components in concentrations above de minimis levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified.
<b>CERCLA</b>	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill.
<b>Clean Water Act (CWA)</b>	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
<b>California Proposition 65</b>	<p>This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health &amp; Safety Code Section 25249.5):</p> <p>Toluene: &lt;0.002%</p>
<b>New Jersey Right-to-Know Label</b>	Petroleum Oil
<b>Additional Regulatory Remarks</b>	No additional regulatory remarks.

## SECTION 16. OTHER INFORMATION

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Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

### REVISION INFORMATION

**Version Number** 2.0  
**Revision Date** 2/10/2006  
**Print Date** Printed on 2/10/2006.

### ABBREVIATIONS

AP: Approximately EQ: Equal >: Greater Than <: Less Than NA: Not Applicable ND: No Data NE: Not Established  
ACGIH: American Conference of Governmental Industrial Hygienists AIHA: American Industrial Hygiene Association  
IARC: International Agency for Research on Cancer NTP: National Toxicology Program  
NIOSH: National Institute of Occupational Safety and Health OSHA: Occupational Safety and Health Administration  
NPCA: National Paint and Coating Manufacturers Association HMIS: Hazardous Materials Information System  
NFPA: National Fire Protection Association EPA: US Environmental Protection Agency

### DISCLAIMER OF LIABILITY

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**THE INFORMATION IN THIS MSDS WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS MSDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS MSDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE.**

**THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.**

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\*\*\*\*\* END OF MSDS \*\*\*\*\*

**K-37 SEPTIC TANK TREATMENT****IDENTITY (As Used on Label and List)**

Roebic K-37 Septic Tank Treatment

Date Prepared – 07/01/98 Rev. 06/28/01

Person Preparing Document - David Lawler

**Section 1****Manufacturer's name**

Roebic Laboratories, Inc.

**Address (Number, Street, City, State, and ZIP Code)**

25 Connair Road, PO Box 927

Orange, CT 06477

**Emergency Telephone Number**

CHEMTREC 1-800-424-9300

**Telephone Number for Information**

1-203-795-1283

**Section 2 - Hazardous Ingredients / Identity Information****Hazardous Components (Specific Chemical Identity; Common Name(s)):**

This product is aqueous suspension containing non-pathogenic laboratory controlled bacteria culture, and a few fermentation by-products. Organisms used are non-pathogenic, but can cause infection when in contact with open wounds. These organisms are susceptible to many commonly used antibiotics.

**Section 3 - Physical / Chemical Characteristics****Boiling Point** - 212° F**Vapor Pressure (mm Hg.)** - Same as water.**Vapor Density (AIR = 1)** - Same as water.**Solubility in Water** - 99%**Specific Gravity (H2O = 1)** - 1**Melting Point** - N/A**Evaporation Rate (Butyl Acetate = 1)** - Same as water.**Appearance & Odor** - Slightly hazy, slightly earthy odor.**Section 4 - Fire & Explosion Hazard Data****Flash Point Method Used** - N/A**Extinguishing Media** - N/A**Special Fire Fighting Procedures** - N/A**Unusual Fire & Explosion Hazards** - N/A**Flammable Limits** - N/A LEL UEL**Section 5 - Reactivity Data****Stability** – Stable**Incompatibility (Materials to Avoid):**

Strong acids or alkali may inactivate bacteria cultures.

**Hazardous Polymerization** - Will not occur.**Conditions to Avoid** - N/A**Hazardous Decomposition of By-products** – None**Conditions to Avoid** - N/A

**K-37 SEPTIC TANK TREATMENT****Section 6 - Health Hazard Data**

**Route(s) of Entry:** Inhalation? N/A Skin? Yes Ingestion? Yes

**Health Hazards (Acute & Chronic):**

**Chronic** - N/A

**Acute** - Skin Contact: Possible Dermal Sensitivity

Eye Contact: Possible Infection

Ingestion: Possible GI Tract Irritation

**Carcinogenicity:** NTP? N/A IARC Monographs? N/A OSHA Regulated? No

**Signs & Systems of Exposure:**

Dermal: Redness, Other signs of topical infection

Eyes: Redness, Itching, Other signs of infection

**Medical Conditions Generally Aggravated by Exposure** - N/A

**Emergency & First Aid Procedures:**

Skin Contact: Wash with soap and water.

Eye Contact: Flush with plenty of water, contact physician.

**Section 7 - Precautions for Safe Handling & Use**

**Steps to be taken in case material is released or spilled:**

Wash down drain with water or use chemical absorbent and sweep up. Disposal must be in accordance with local, state, and federal regulations.

**Waste Disposal Method:** Drain, Sewer Line, or Open Ground

**Precautions to be taken in handling and storing:**

Wash hands thoroughly with soap and water after use. Avoid contact with eyes.

**Other Precautions:**

Avoid prolonged exposure to temperatures above 115° F to maintain product activity.

**Section 8 - Control Measures**

**Respiratory Protection (Specify Type):** Normal Room Ventilation

**Ventilation: Local Exhaust?** N/A

**Mechanical (General)?** N/A

**Special?** N/A

**Other?** N/A

**Eye Protection:** Use protective glasses to avoid contact.

**Work / Hygienic Practices:** None except as noted above.

**Protective Gloves:** None required.

**Other Protective Clothing or Equipment:** None required.

**K-57 SEPTIC TANK & CESSPOOL CLEANER****IDENTITY (As Used on Label and List)**

K-57 Septic Tank &amp; Cesspool Cleaner

Date Prepared – 07/01/01

Person Preparing Document - David Lawler

**Section 1****Manufacturer's name**

Roebic Laboratories, Inc.

**Address (Number, Street, City, State, and ZIP Code)**

25 Connair Road, PO Box 927

Orange, CT 06477

**Emergency Telephone Number**

CHEMTREC 1-800-424-9300

**Telephone Number for Information**

1-203-795-1283

**Section 2 - Hazardous Ingredients / Identity Information****Hazardous Components (Specific Chemical Identity; Common Name(s)):**

This product is aqueous suspension containing non-pathogenic laboratory controlled bacteria culture, and a few fermentation by-products. Organisms used are non-pathogenic, but can cause infection when in contact with open wounds. These organisms are susceptible to many commonly used antibiotics.

**Section 3 - Physical / Chemical Characteristics****Boiling Point** 212° F**Vapor Pressure (mm Hg.)** - Same as water.**Vapor Density (AIR = 1)** - Same as water.**Solubility in Water** - 99%**Specific Gravity (H2O = 1)** – 1**Melting Point** - N/A**Evaporation Rate (Butyl Acetate = 1)** - Same as water.**Appearance & Odor** - Slightly hazy, slightly earthy odor.**Section 4 - Fire & Explosion Hazard Data****Flash Point Method Used** - N/A**Extinguishing Media** - N/A**Special Fire Fighting Procedures** - N/A**Unusual Fire & Explosion Hazards** - N/A**Flammable Limits** - N/A    LEL    UEL**Section 5 - Reactivity Data****Stability** – Stable**Incompatibility (Materials to Avoid):**

Strong acids or alkali may inactivate bacteria cultures.

**Hazardous Polymerization** - Will not occur.**Conditions to Avoid** - N/A**Hazardous Decomposition of By-products** – None**Conditions to Avoid** - N/A

**K-57 SEPTIC TANK & CESSPOOL CLEANER****Section 6 - Health Hazard Data**

**Route(s) of Entry:** Inhalation? N/A Skin? Yes Ingestion? Yes

**Health Hazards (Acute & Chronic):**

**Chronic** - N/A

**Acute** - Skin Contact: Possible Dermal Sensitivity

Eye Contact: Possible Infection

Ingestion: Possible GI Tract Irritation

**Carcinogenicity:** NTP? N/A IARC Monographs? N/A OSHA Regulated? No

**Signs & Systems of Exposure:**

Eyes: Redness, Itching, Other signs of infection

**Medical Conditions Generally Aggravated by Exposure** - N/A

**Emergency & First Aid Procedures:**

Skin Contact: Wash with soap and water.

Eye Contact: Flush with plenty of water, contact physician.

**Section 7 - Precautions for Safe Handling & Use**

**Steps to be taken in case material is released or spilled:**

Wash down drain with water or use chemical absorbent and sweep up. Disposal must be in accordance with local, state, and federal regulations.

**Waste Disposal Method:** Drain, Sewer Line, or Open Ground

**Precautions to be taken in handling and storing:**

Wash hands thoroughly with soap and water after use. Avoid contact with eyes.

**Other Precautions:**

Avoid prolonged exposure to temperatures above 115° F to maintain product activity.

**Section 8 - Control Measures**

**Respiratory Protection (Specify Type):** Normal Room Ventilation

**Ventilation: Local Exhaust?** N/A

**Mechanical (General)?** N/A

**Special?** N/A

**Other?** N/A

**Protective Gloves:** None required.

**Other Protective Clothing or Equipment:** None required.

**Eye Protection:** Use protective glasses to avoid contact.

**Work / Hygienic Practices:** None except as noted above.



**IDENTITY (As Used on Label and List)**

Roebic K-47 Cesspool Treatment

**Date Prepared** – 11/05/01

**Person Preparing Document** - David Lawler

**Section 1**

**Manufacturer's name**

Roebic Laboratories, Inc.

**Address (Number, Street, City, State, and ZIP Code)**

25 Connair Road, PO Box 927

Orange, CT 06477

**Emergency Telephone Number**

CHEMTREC 1-800-424-9300

**Telephone Number for Information**

1-203-795-1283

**Section 2 - Hazardous Ingredients / Identity Information**

**Hazardous Components (Specific Chemical Identity; Common Name(s))**

This product is an aqueous suspension containing non-pathogenic laboratory controlled bacteria culture, and a few fermentation by-products. Organisms used are non-pathogenic, but can cause infection when in contact with open wounds. These organisms are susceptible to many commonly used antibiotics.

**Section 3 - Physical / Chemical Characteristics**

**Boiling Point** 212\* F

**Vapor Pressure (mm Hg.)** - same as water

**Vapor Density (AIR = 1)** - same as water

**Solubility in Water** 99%

**Specific Gravity (H2O = 1)** 1

**Melting Point** - N/A

**Evaporation Rate (Butyl Acetate = 1)** - same as water

**Appearance & Odor** - slightly hazy, slightly earthy odor

**Section 4 - Fire & Explosion Hazard Data**

**Flash Point Method Used** - N/A

**Extinguishing Media** - N/A

**Special Fire Fighting Procedures** - N/A

**Unusual Fire & Explosion Hazards** - N/A

**Flammable Limits** - N/A

**LEL**

**UEL**

**Section 5 - Reactivity Data**

**Stability** - Stable

**Incompatibility (Materials to Avoid)**

Strong acids or alkali may inactivate bacteria cultures

**Hazardous Polymerization** - Will not occur

**Conditions to Avoid** - N/A

**Hazardous Decomposition of By-products**

None

**Conditions to Avoid** - N/A

**Section 6 - Health Hazard Data**

**Route(s) of Entry:** Inhalation? N/A Skin? Yes Ingestion? Yes

**Health Hazards (Acute & Chronic)**

**Chronic** - N/A

**Acute** - Skin Contact: Possible Dermal Sensitivity

Eye Contact: Possible Infection

Ingestion: Possible GI Tract Irritation

**Carcinogenicity:** NTP? N/A IARC Monographs? N/A OSHA Regulated? No

## **Section 6 - Health Hazard Data - Continued**

### **Signs & Systems of Exposure**

Dermal: Redness, Other signs of topical infection

Eyes: Redness, Itching, other signs of infection

**Medical Conditions Generally Aggravated by Exposure - N/A**

### **Emergency & First Aid Procedures**

Skin Contact: Wash with soap and water

Eye Contact: Flush with plenty of water, contact physician

## **Section 7 - Precautions for Safe Handling & Use**

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### **Steps to be taken in case material is released or spilled:**

Wash down drain with water or use chemical absorbent and sweep up.  
Disposal must be in accordance with local, state, and federal regulations.

### **Waste Disposal Method:**

Drain, Sewerline, or Open Ground

### **Precautions to be taken in handling and storing:**

Wash hands thoroughly with soap and water after use. Avoid contact with eyes.

### **Other Precautions:**

Avoid prolonged exposure to temperatures above 115 F to maintain product activity.

## **Section 8 - Control Measures**

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### **Respiratory Protection (Specify Type):**

Normal Room Ventilation

**Ventilation: Local Exhaust?** N/A

**Mechanical (General)?** N/A

**Special?** N/A

**Other?** N/A

**Protective Gloves:** None required

**Other Protective Clothing or Equipment:** None required

**Eye Protection:** Use protective glasses to avoid contact

**Work / Hygienic Practices:** None except as noted above





**Material Safety Data Sheet**  
**Roebic K-77 Root Killer, 2 pounds**

Conforms with OSHA form OMB No. 1218-0072

Roebic Laboratories, Inc.  
25 Connair Road, PO Box 927  
Orange, CT 06477

**Emergency Telephone Numbers-**  
ROEBIC (203) 795-1283  
CHEMTREC (800) 424-9300

**Date:** 11/09/04  
**Preparer:** Dave Lawler

**SECTION I - INGREDIENTS**

**Chemical Name** Copper Sulfate, Blue Vitrol, Bluestone  
**Trade name** Roebic K-77 Root Killer  
**DOT Shipping Name** Copper Sulfate (Blue Vitrol)  
**CAS Number** 7758-98-7

**SECTION II – HAZARDOUS INGREDIENTS**

<b>INGREDIENTS</b>	<b>CAS No.</b>	<b>%</b>
Copper Sulfate Pentahydrate (CuSO <sub>4</sub> .5H <sub>2</sub> O)	7758-98-7	99.0

**Hazard Data**

Health hazard: Oral LD50 (rats, male) = 472 mg/kg.

Oral- toxic

Dermal- non irritating to skin

Inhalation- non toxic

Eye- corrosive

According to FHSLA regulations, Aquatic hazard: LC50 set at >1.0>1mg/1 (water programs hazardous substances, FPA) \*see possible use exceptions on last page.

**SECTION III – PHYSICAL DATA**

**Boiling Point** -5 H<sub>2</sub>O @ 150°C  
**Volatility/VOL (%)** -  
**Melting Point** -4 H<sub>2</sub>O @ 110°C  
**Vapor Pressure (mm Hg)** -  
**Vapor Density (air=1)** -  
**Solubility in H<sub>2</sub>O** 22.37 @ 0°C, 117.95@ 100°C  
**Appearance/Odor** Blue crystals or powder, no odor  
**Specific Gravity (H<sub>2</sub>O=1)** 2.284  
**Evaporation Rate (Butyl Acetate = 1)**  
**pH (as is)** N/A  
**pH (1% SOLN.)** Not known

**SECTION IV – FIRE AND EXPLOSION HAZARD DATA**

**Flash Point** Non-flammable  
**Auto Ignition Temperature** N/A  
**Flammable Limits in Ai, % by vol.** Lower N/A Upper N/A  
**Extinguish Media** Copper sulfate does not burn, nor will it support combustion. If stored with other combustible products, use water, CO<sub>2</sub> or dry chemical.  
**Special Fire Fighting Procedure** If dry heated above 600°C, SO<sub>2</sub> is evolved. If water is used, it will be solubilize the CuSO<sub>4</sub>. 5H<sub>2</sub>O, and care should be used to keep such water out of streams or other water bodies.  
**Unusual Fire Hazard** None

## SECTION V – HEALTH HAZARD DATA

<b>Routes of Entry</b>	Inhalation, Skin Contact, Skin Absorption, Eye Contact, Ingestion
<b>Hazard Classification</b>	Inhalation: Produces irritation by inhalation, in accordance with FHSLA regulations. TWA=1 mg/m <sub>3</sub> for all copper dusts and mists. Skin Contact: No effect on skin, in accordance with FHSLA regulations. Skin Absorption: Not toxic dermally, in accordance with FHSLA regulations. Eye Contact: Corrosive in accordance with FHSLA regulations. Ingestion: Toxic orally, in accordance with FHSLA regulations.
<b>Basis for Classification</b>	Inhalation: Acute inhalation LC50, in excess of 1.48 mg / 1 air. Skin Contact: Skin irritations index, zero Skin Absorption: Dermal LD50, in excess of 8,000 mg/kg Eye Contact: Eye irritation score, 24 hrs. = 41.67 / 48hrs. corrosive Ingestion: Acute oral LD50 (male rats) = 472 mg/kg
<b>Source</b>	Laboratory testing in accordance with FHSLA regulations.
<b>Over Exposure Effects</b>	
<b>Acute Overexposure</b>	Copper sulfate is emetic, and has seldom been fatal
<b>Chronic Overexposure</b>	Prolonged over ingestion might increase liver copper content
<b>First Aid</b>	<b>Eye contact:</b> Flush immediately with plenty of water for at least 15 minutes, hold eyelids apart during irrigation. Seek medical attention. <b>Skin contact:</b> Wash or shower thoroughly with water. Remove and wash contaminated clothing before reuse. <b>Ingestion:</b> Drink a large quantity of water or milk. Get medical attention. <b>Inhalation:</b> Remove worker from exposure and seek medical aid.
<b>Notes to Physician:</b>	Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

## SECTION VI – REACTIVITY DATA

<b>Chemical Stability</b>	Stable
<b>Conditions to Avoid</b>	None
<b>Incompatible Materials</b>	None known when product remains dry. Product readily dissolves in water. Solutions are corrosive to mild steel. Store solutions in plastic, rubber, 304, 347, or 316 stainless steel.
<b>Hazardous Decomposition Products</b>	None at normal process temperatures and pressures. If dry product is heated above 1100°F (600°C) sulfur dioxide (SO <sub>2</sub> ) may be released.
<b>Hazardous Polymerization</b>	Will not occur
<b>Polymerization Avoid</b>	N/A

## SECTION VII – SPILL OR LEAK PROCEDURE

<b>Aquatic Toxicity (E.G. 96 HR. TLM)</b>	LC50 24 hr. = Daphnia magna = .182 mg/1. Rainbow trout = 0.17 mg/1. Bluegill 1.5 mg/1. All values are expressed as copper sulfate pentahydrate. Test water was soft.
<b>Waste Disposal Method</b>	Sweep up crystal or powdered product and dispose in an approved landfill. If product is in confined solution, introduce lime or soda ash to form insoluble copper salts and then dispose of in an approved landfill. Product when discarded is not listed by EPA in 40 CFR paragraph 261.33.
<b>Steps to be taken if Material is Released or Spilled</b>	Contact appropriate local, state, or federal pollution control officials if warranted, especially if spilled into public

waters. If spill is confined to the use site, neutralize with lime or soda ash and use absorbent and remove to approved land fill.

**Neutralizing Chemicals**

Lime or soda ash

**SECTION VIII – SPECIAL PROTECTION INFORMATION**

- Ventilation Requirements** TWA = 1 mg/m<sup>3</sup> for all copper dusts and mists. If TWA exceeds this limit in the workplace, appropriate ventilation should be provided or respiratory protective equipment must be provided.
- Specific Personal Protective Equipment** TWA = 1 mg/m<sup>3</sup> for all copper dusts and mists. If TWA exceeds this limit in the workplace, respiratory protective equipment must be provided in accordance with the paragraph 1910.134 of title 29, code of federal regulations.
- Eye Protection** Chemical goggles should be worn when handling the product.
- Protective Gloves** Rubber gloves may be worn
- Other Protection** No special protective clothing or equipment required.

**SECTION IX – SPECIAL PRECAUTIONS**

- Precautionary Statement** No special precautions are known other than those stated on the bag and in this Material Safety Data Sheet. Under some conditions copper sulfate dust may be irritating to the skin of some individuals. Problem use conditions seem to be aggravated by high humidity and sweating when copper sulfate is applied undiluted and dust contact occurs.

**Other Handling and Storage Requirements** Store product in a dry place.

**Additional Regulatory Concerns**

**Federal**

**FDA** Is generally recognized as safe (GRAS) as a trace mineral for livestock when used in accord with good management practices. 21 CFR paragraph 582.80.

**USDA** Is GRAS when used in food wrap paper and paperboard products. 21 CFR paragraph 182.90.

**CPSC**

**TSCA** This product and all of ingredients are certified for inclusion on the toxic substances control act inventory of chemical substances.

**Other** Labeled and registered with the EPA as a pesticide to control algae in water and roots in sewers.

**OSHA** Product is a hazardous material as defined by 20 CFR paragraph 1910.1200 because it is corrosive to the eye, it is toxic orally, and it is a regulated air contaminant for dusts and mists. Product is not listed by the National Toxicology Program, the International Agency for Research on Cancer, nor the Registry of Toxic Effects of Chemical Substances (1981-82) as a carcinogen or potential carcinogen.





**Material Safety Data Sheet**

May be used to Comply with  
 OSHA's Hazard Communication Standard 29 CFR 1910.  
 Standard must be consulted for specific requirements

U.S. Department of Labor

Occupational Safety and Health Administration  
 (Non-Mandatory Form) Form Approved OMB No. 1218-0072

**Identity (As Used On Label and List)**

CHROME-R-TILE CONCENTRATED  
 CLEANER

NOTE: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

**Section I—Manufacturer's Name**

(Address, Street, City, State, & Zip Code)

**HAZARD RATING**

SANTEEN PRODUCTS COMPANY  
 1321 7th Street South  
 Hopkins, Minnesota 55343

Emergency Telephone Number

INFOTRAC 1-800-535-5053

Telephone Number for Information

(612)935-4500

Date Prepared

Revised: 1/28/02

HEALTH 2

FLAMMABILITY 0

REACTIVITY 1

0 - Minimal  
 1 - Slight  
 2 - Moderate  
 3 - Serious  
 4 - Extreme

Protective Equipment:

Goggles & Gloves

**Section II—Hazardous Ingredients / Identity Information**

Hazardous Components (Specify Chemical Identity, Common Names)

OSHA PEL

ACGIH TLV

Other Limits  
 Recommended

% (optional)

Phosphoric Acid CAS# 7664-38-2

1mg/m3

1mg/m3

n/a

35.0

Butyl Cellosolve, 2-Butoxyethanol CAS#111-76-2

50 ppm

25ppm

n/a

4.0

Nonylphenol +9EO Polyethoxylate CAS# 9016-45-9

Not est.

Not est.

n/a

Subject to reporting requirement Sec.313 of SARA  
 Title III of 40 CFR 372

**Section III—Physical Chemical Characteristics**

Boiling Point	212°F	Specific Gravity (WATER =1)	1.3
Vapor Pressure	ND	Melting Point	n/a
Vapor Density	ND	Evaporation Rate	ND
Solubility in Water	100% complete		
Appearance and Odor	clear to slight green tinted liquid with pleasant odor		

**Section IV—Fire and Explosion Hazard Data**

Flash Point	None	Flammable Limits	LEL	UEL
		N/A	N/A	N/A
Extinguishing Media	water, fog, dry chemical, carbondioxide			

**Special Fire Fighting Procedures**

Firemen should use self-contained breathing apparatus

**Unusual Fire and Explosion Hazards**

None



## Section V—Reactivity Data

Stability	Unstable	Conditions to Avoid Extremes in temperature
	Stable	
	X	

Incompatibility (Materials to Avoid) Avoid contact with alkaline (caustic) materials

Hazardous Decomposition or Byproducts May produce toxic fumes of phosphorous compounds

Hazardous Polymerization	May Occur	X	Conditions to Avoid	None
	Will Not Occur			

## Section VI—Health Hazard Data

Route(s) of Entry:	Inhalation?	yes	Skin?	yes	Ingestion?	yes
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Health Hazards (Acute and Chronic)

Acute: Eyes—can cause irritation. Skin—can cause irritation. Ingestion—can cause gastrointestinal disturbances.

Chronic: None known

Carcinogenicity:	NTP?	n/a	IARC Monographs?	n/a	OSHA Regulated?	n/a
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Signs and Symptoms of Exposure	Eye and skin irritation
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Medical Conditions Generally Aggravated	None known
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Emergency and First Aid Procedures	Eyes—flush with water get medical attention. Skin—wash exposed area with soap and water get medical attention. Ingestion—get medical attention. Inhalation—remove to fresh air get medical attention.
------------------------------------	---

## Section VII—Precautions For Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled	Area should be diluted with water and neutralized with soda ash.
---	--

Waste Disposal	In accordance with local, state, and federal regulations
----------------	--

Precautions to be Taken in Handling and Storage	Keep container closed and store in dry area. Keep away from alkaline (caustic) materials
---	--

Other Precautions	Keep away from children. Never combine chemicals
-------------------	--

## Section VIII—Control Measures

Respiratory Protection (Specify Type)	In inadequately areas use self-contained breathing apparatus
---------------------------------------	--

Ventilation	Local Exhaust	If general is inadequate	Special	none
	Mechanical (General)	Normal ventilation	Other	none

Protective Gloves	rubber or PVC	Eye Protection	face shield or safety glasses
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Other Protective Clothing or Equipment	plastic covering for clothing	Work / Hygienic Practices	Observe good personal hygiene, wash hands before eating, avoid inhalation or ingestion.
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# MATERIAL SAFETY DATA SHEET

(COMPLIES WITH 29CFR 1910.1200)

<b>SECTION I - CHEMICAL PRODUCT &amp; COMPANY IDENTIFICATION</b>		
<b>Identity (As Used on Label and List):</b> S-T Drain Opener		
<b>Product Class:</b> Acid cleaner		
<b>Emergency Telephone Number:</b> 800-535-5053 (INFOTRAC)		
<b>Telephone Number for Information:</b> 952-935-4500		
<b>Distributed by:</b> Santeen Products 1321 7 <sup>th</sup> street South Hopkins, MN 55343		
<b>SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS</b>		
<b>Hazardous Components (Specific Chemical Identity):</b>		
<b>Chemical</b>	<b>Common Name(s)</b>	<b>%</b>
A	Sulfuric Acid CAS #7664-93-9	85 - 87
B	Proprietary Inhibitor CAS N. Av.	.1
C	Water CAS # 7732-18-5	15 - 13
<b>SECTION III - HAZARDS IDENTIFICATION</b>		
<b>Emergency Overview</b>		
<b>Appearance and Odor:</b> Brown liquid, Distinctive odor.		
<b>Primary Hazards:</b> Corrosive, Poison		
<b>Potential Health Hazards</b>		
<b>Route(s) of Entry:</b> Skin Absorption: X Ingestion: X Inhalation: X		
<b>Eye:</b> May cause severe burns.		
<b>Skin:</b> May cause severe burns.		
<b>Ingestion:</b> May be harmful or fatal if swallowed.		
<b>Inhalation:</b> Vapors may be harmful.		
<b>Signs and Symptoms of Exposure:</b> Severe irritation or chemical burns on direct contact.		
<b>Carcinogenicity:</b> NTP? No IARC Monographs? No		
<b>OSHA Regulated?</b> No		
<b>Target Organ (s):</b> Eyes, skin, teeth respiratory system.		
<b>Medical Conditions Generally Aggravated by Exposure:</b> pre-existing skin or respiratory conditions		
<b>Health Hazards, Chronic:</b> Cancer Hazard risk from exposure to mist not liquid from IRAC classification. Risk is dependent on duration and level of exposure.		
<b>SECTION IV - FIRST AID MEASURES</b>		
<b>Emergency and First Aid Procedures:</b>		
<b>If Swallowed do not induce vomiting:</b> Call a physician immediately. Rinse mouth with water. Drink water in large amounts. Never give anything by mouth to an unconscious person. <b>Eye Contact:</b> Flush eyes with running water for at least 15 minutes. Obtain immediate medical attention. <b>Skin Contact:</b> Flood surface with water. Seek immediate medical attention Remove and wash contaminated clothing before reuse.		
<b>Corrosive:</b> May cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopy control. If burn is present, treat as thermal burn, after decontamination. No specific antidote.		
<b>Sources Used:</b> Raw material data, general toxicology from the trade for similar products.		
<b>SECTION V - FIRE FIGHTING MEASURES</b>		
<b>Flammability:</b> Non-flammable <b>Autoignition Temperature:</b> N. Ap.		
<b>Flash Point (method used):</b> None		
<b>Flammable Limits:</b> N. Ap. LEL UEL		
<b>Extinguishing Media</b> N. Ap.		
<b>Water?</b> <b>Foam?</b> <b>Water Fog?</b>		
<b>Alcohol Foam?</b> <b>CO<sub>2</sub>?</b> <b>Dry Chemical?</b>		
<b>Vaporizing Liquid?</b> <b>Other?</b>		
<b>Special Fire Fighting Procedures:</b> Material is strong dehydrating agent		
<b>Unusual Fire and Explosion Hazards:</b> Flammable hydrogen gas can be generated when it is in contact with metals.		
Wear full protective clothing with NIOSH approved self contained breathing apparatus with full face piece Structural firefighters protective clothing is ineffective for fires involving this material		
<b>SECTION VI - ACCIDENTAL RELEASE MEASURES</b>		
<b>Steps to be Taken in Case Material is Released or Spilled:</b> Use appropriate as listed in section VIII		
Dike and contain spill with inert material (sand, earth, etc). Neutralize with alkaline material. Collect spill. CERCLA reportable in excess of RQ quantities.		
<b>SECTION VII - HANDLING AND STORAGE</b>		
<b>Precautions to be Taken in Handling and Storing:</b>		
Normal care in handling and storage for acid products. Keep out of direct sunlight, heat, water and incompatible materials.		
<b>Other Precautions:</b> Keep out of reach of children. Keep from freezing.		
<b>SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION</b>		
<b>Respiratory Protection (Specify Types):</b> Not required where ventilation is sufficient to maintain Sulfuric acid vapor level below listed TLV (Section XI).		
<b>Ventilation:</b> <b>Local Exhaust:</b> Not required <b>Special:</b> Not required		
<b>Mechanical (General):</b> As required to keep vapor levels below listed TLV (Section XI). <b>Other:</b> Not required		
<b>Protective Gloves:</b> Chemical resistant rubber		
<b>Eye Protection:</b> Approved safety goggles or glasses.		

<b>Footwear:</b> Chemical resistant footwear.					
<b>Other Protective Clothing or Equipment:</b> Not required					
<b>Work/Hygienic Practices:</b> Do not breath vapors or fumes. Do not contaminate food or beverages with cleaning chemicals.					
<b>SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS</b>					
<b>Boiling Point:</b> Approximately 529°F		<b>pH:</b> < 1			
<b>Specific Gravity (H<sub>2</sub>O = 1):</b> 1.793		<b>% Volatile:</b> N. Av.			
<b>Vapor Density (Air = 1):</b> > 1		<b>Odor Threshold:</b> N. Av.			
<b>Evaporation Rate (Butyl Acetate = 1):</b> N. Av.		<b>Oil/Water Distribution</b>			
<b>Solubility in Water:</b> Miscible with water liberates heat when in contact with water					
<b>Vapor Pressure (MM HG):</b> 1.7 mm @ 250 F					
<b>Melting Point:</b> N. Ap.					
<b>SECTION X - STABILITY AND REACTIVITY</b>					
<b>Stability:</b> <b>Unstable:</b> <b>Stable:</b> X					
<b>Conditions to Avoid:</b> Avoid contact with metals. Reacts with water					
<b>Incompatibility (materials to avoid):</b> Chlorine bleach, oxidizing agents.					
<b>Hazardous Decomposition or By-products:</b> N. Av.					
<b>Hazardous Polymerization:</b> <b>May occur:</b> <b>Will not occur:</b> X					
<b>Conditions to Avoid:</b> N. Ap.					
<b>SECTION XI - TOXICOLOGICAL INFORMATION</b>					
<b>Chemical</b>	<b>OSHA PEL</b>	<b>ACGIH TLV</b>	<b>Recom.</b>	<b>LD50</b>	<b>LC50</b>
A	1mg/m3	1mg/m3	N. Av.	2140mg/kg (rat, oral)	510mg/m3 (rat, 2H)
B	None	None	N. Av.	N. Av.	N. Av.
C	None	None	N. Av.	N. Av.	N. Av.
<b>Teratogen, Mutagen, Reproductive Toxin Status:</b> N. Av.					
<b>Toxicologically Synergistic Products:</b> N. Av.					
<b>SECTION XII - ECOLOGICAL INFORMATION</b>					
<b>Ecotoxicological Information:</b> N. Av.					
<b>Chemical Fate Information:</b> N. Av.					
<b>SECTION XIII - DISPOSAL CONSIDERATIONS</b>					
<b>Waste Disposal Method:</b>					
Neutralize and dispose of spilled material as a pesticide in accordance with local, state and federal regulations. Waste from normal cleaning procedures may be sewerred.					
<b>RCRA Hazard Class:</b> D002, characteristic corrosive.					
<b>SECTION XIV - TRANSPORT INFORMATION</b>					
<b>Shipping Classification:</b> Sulfuric Acid 8					
<b>UN Number:</b> UN 1830					
<b>Packing Group:</b> II					
<b>SECTION XV - PREPARATION DATA</b>					
<b>Prepared By:</b> Health and Safety Department					
<b>Telephone Number:</b> 763-509-7937					
<b>Date:</b> 12-07-2005					
<b>SECTION XVI - REGULATORY INFORMATION</b>					
<b>US Federal Regulations</b>					
<b>TSCA Status:</b> All ingredients listed.					
<b>CERCLA Reportable Quality:</b> 1,000 lbs. Sulfuric acid					
<b>SARA Title III</b>					
<b>Section 302 Extremely Hazardous Chemicals:</b> Sulfuric acid					
<b>Section 311/312 Hazard Category:</b> Acute, Chronic health, Reactive					
<b>Section 313 Toxic Chemicals:</b> Sulfuric acid					
<b>SECTION XVII - OTHER INFORMATION</b>					
None					
N. Ap. - Not Applicable; N.Av. - Not Available					

## NFPA SYSTEM

3 A. Health Hazard      0 A. Fire Hazard      2 A. Reactivity Hazard

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE, HOWEVER NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. MINUTEMAN INTERNATIONAL, INC. ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE TO VENDEES, USERS OR THIRD PARTIES CAUSED BY THE MATERIAL. SUCH VENDEES OR USERS ASSUME ALL RISKS ASSOCIATED WITH THE USE OF THE MATERIAL.



**Material Safety Data Sheet**

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor  
Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072

IDENTITY (as Used on Label and List)  
SANTEEN DELIMER & TOILET BOWL CLEANER

Note: Blank spaces are not permitted. If any item is not applicable or no information is available, the space must be marked to indicate that.

Section I  
Manufacturer's name: SANTEEN PRODUCTS COMPANY  
Address (Number, Street, City, State and ZIP Code): 1321 7th Street South, Hopkins, Minnesota 55343

Emergency Telephone Number: INFOTRAC 1-800-535-5053  
Telephone Number for Information: 952-935-4500  
Date Prepared: October 10, 2005  
Signature of Preparer (optional):

Section II—Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity, Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Hydrochloric Acid CAS# 7647-01-0	5 ppm	5 ppm	n/a	24

Subject to the reporting requirements of Sec.313 of SARA Title III of 40 CFR 372

Section III—Physical/Chemical Characteristics

Boiling Point	212°F	Specific Gravity (H <sub>2</sub> O = 1)	1.087
Vapor Pressure (mm Hg)	N/D	Melting Point	n/a
Vapor Density (AIR = 1)	N/D	Evaporation Rate (Butyl Acetate = 1)	n/a
Solubility in Water	Complete 100%		
Appearance and Odor	Clear to milky-yellow white liquid - very slight acid odor		

Section IV—Fire and Explosion Hazard Data

Flash Point (Method Used)	None	Flammable Limits	N/A	LEL	N/A	UEL	N/A
Extinguishing Media	Use water fog, foam or co2 extinguishing media						
Special Fire Fighting Procedures	Firefighters should be equipped with self-contained breathing apparatus and turn out gear						
Unusual Fire and Explosion Hazards	Unusual Hazards: None. Flammable and potentially hydrogen gas can be generated from reaction with some metals						

OSHA 174 Sept. 1985

HAZARD RATING	
HEALTH	3
FLAMMABILITY	0
REACTIVITY	0

0 - Minimal  
1 - Slight  
2 - Moderate  
3 - Serious  
4 - Extreme

**Section V—Reactivity Data**

Stability	Unstable		Conditions to Avoid	Extremes in temperatures
	Stable	X		
Incompatibility ( <i>Materials to Avoid</i> )				
Avoide contact with alkaline (caustic) materials				

**Hazardous Decomposition or Byproducts**

Hazardous Polymerization	May Occur		Conditions to Avoid	Hydrogen chloride, acid vapors
	Will Not Occur		X	

**Section VI—Health Hazard Data**

Route(s) of Entry                      Inhalation?    yes                      Skin?    yes                      Ingestion?    yes

Health Hazards (*Acute and Chronic*) ACUTE: Eyes - can cause irritation SKIN - can cause irritation

INGESTION - can cause gastrointestinal disturbances. CHRONIC: None Known

Carcinogenicity                      NTP?    n/a                      IARC Monographs?    n/a                      OSHA Regulated?    n/a

Signs and Symptoms of Exposure    Can cause irritation to eyes, nose, throat and skin

Medical Conditions  
Generally Aggravated by Exposure    None Known

**Emergency and First Aid Procedures**

GET IMMEDIATE MEDICAL ATTENTION. Inhalation: Remove to fresh air. Eyes: flush with water for 15 min. Skin: wash area with soap and water. Ingestion: dilute with water DO NOT INDUCE

**Section VII—Precautions for Safe Handling and Use**

VOMITING

**Steps to Be Taken in Case Material Is Released or Spilled**

Dilute with water and neutralize with soda ash or lime

Waste Disposal Method    In accordance with local, state, and federal regulations.

Precautions to Be Taken in Handling and Storing    Keep out of reach of children, keep containers closed, store in a cool, dry well ventilated area away from alkaline (caustic) materials

Other Precautions    Never combine with other chemicals

**Section VII—Control Measures**

Respiratory Protection (*Specify Type*)    Use self-contained breathing apparatus in inadequately ventilated area

Ventilation	Local Exhaust	if general is inadequate	Special	None
	Mechanical (General)	Normal ventilation	Other	None

Protective Gloves	Rubber or PVC	Eye Protection	Face shield or safety glasses
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Other Protective Clothing or Equipment    Plastic covering for clothing and shoes

Work/Hygienic Practices    Observe good personal hygiene, wah hands before eating, avoide inhalation or Ingestion.

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

General Name: <b>AF973 Pressure Sensitive Aluminum Foil Tape</b>	<table border="1"> <thead> <tr> <th colspan="2">HMIS III</th> <th rowspan="2">Icons: None</th> </tr> </thead> <tbody> <tr> <td colspan="2">AF973 Pressure Sensitive Aluminum Foil Tape</td> </tr> <tr> <td>HEALTH</td> <td>1</td> </tr> <tr> <td>FLAMMABILITY</td> <td>1</td> </tr> <tr> <td>PHYSICAL HAZARD</td> <td>0</td> </tr> <tr> <td>PERSONAL PROTECTION</td> <td>B</td> </tr> </tbody> </table>	HMIS III		Icons: None	AF973 Pressure Sensitive Aluminum Foil Tape		HEALTH	1	FLAMMABILITY	1	PHYSICAL HAZARD	0	PERSONAL PROTECTION	B
HMIS III		Icons: None												
AF973 Pressure Sensitive Aluminum Foil Tape														
HEALTH		1												
FLAMMABILITY		1												
PHYSICAL HAZARD		0												
PERSONAL PROTECTION	B													
Shurtape Technologies, LLC														
PO Box 1530														
Hickory, NC 28603-1530														
(828) 322-2700														
Prepared Date: 15 July, 2008	Prepared By: EHS Group													
24-Hour Emergency Phone Number														
CHEMTREC -1-800-424-9300	CHEMTREC Customer Number: 20165													

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	<u>% Weight</u>
Aluminum Foil	7429-90-5	80-90 %
Synthetic Rubber Adhesive	Proprietary	10-20 %

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

May cause skin or eye irritation by mechanical abrasion or by sensitivity to polymers.

Note: If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke. Exposure may cause irritation of the eyes, skin, and respiratory tract. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures should be taken to avoid exposure.

## 4. FIRST AID MEASURES

### Eyes

If wearing contact lenses, remove. Hold eyelids apart and immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

### Skin

Wash with soap and water. Seek medical attention if irritation develops or persists.

### Ingestion:

Do not give anything by mouth to an unconscious person. Seek medical attention.

Shurtape Technologies, LLC PO Box 1530 Hickory, NC 28603-1530 USA Phone 1.888.442.TAPE (8273) Fax 800.335.7651  
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### Inhalation

Not applicable.

## 5. FIRE FIGHTING MEASURES

Flash Point (°F)	<i>Not Determined</i>
LEL	<i>Not Determined</i>

Auto Ignition Temp (°F)	<i>Not Determined</i>
UEL	<i>Not Determined</i>

### Hazardous Products of Combustion

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke.

### Fire and Explosion Hazards

Minimal fire hazard as supplied. Polymers in adhesive and polymer backed cloth will support combustion.

### Extinguishing Media

X	Foam	X	Water Spray	X	CO2	X	Dry Chemical
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### Fire Fighting Instruction

Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

Not applicable.

## 7. HANDLING AND STORAGE

### Handling

Material will be tacky/sticky. Recommend the use of light weight cloth or leather gloves for actual handling of material.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Eye Protection

Safety glasses with side-shields recommended

### Skin Protection

Normal lightweight work clothing will minimize skin contact. Use of lightweight cloth or leather gloves recommended.

### Respiratory Protections

No adverse respiratory exposure anticipated under normal use



## Engineering Controls

No special engineering controls are required

## Exposure Guidelines

Not applicable

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	N/A	Melting Point	N/A
Specific Vapor Density	N/A	Percent Volatiles	<1%
Specific Gravity	N/A	Evaporation Rate	N/A
Appearance	Silver	State	Solid at Ambient Temperature
Odor	No Strong odor	pH	N/A
Viscosity	N/A	Freezing Point	N/A
Molecular Weight	N/A	Solubility in H <sub>2</sub> O	negligible

## 10. STABILITY AND REACTIVITY

### Hazardous Polymerization

Not anticipated under normal or recommended handling, use, or storage conditions.

### Hazardous Decomposition

None anticipated under normal or recommended handling, storage, and use conditions.

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter and particulate matter. This is not the intended use for this product.

### Chemical Stability

Stable

### Incompatibility

Incompatible with: strong acids and oxidizing agents

## 11. TOXICOLOGICAL INFORMATION

Exposure to chemicals and possible effects will not occur with normal use.

## 12. ECOLOGICAL INFORMATION

No Data

## 13. DISPOSAL CONSIDERATION

## Waste Management Information

This material is considered to be non-hazardous under EPA's RCRA regulations. Dispose of per appropriate local regulations. Product is not recyclable.

## 14. DOT Information – 49 CFR 172.101

### DOT description:

Material is not a hazardous material when shipped

### Container / Mode:

Various size packages can be utilized for shipping this material

### NOS Component:

None

### RQ (Reportable Quantity) – 49 CFR 172.101

Product Quantity (lbs) - None

### Other Transportation Information

The DOT Transport Information may vary with the container and mode of shipment

## 15. REGULATORY INFORMATION

### US Federal Regulations

#### TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of the product are listed.

#### DSL (Canada)

The intentional ingredients of this product are listed.

#### CERCLA RQ – 40 CFR 302.4 (a)

None

#### CERCLA RQ – 40 CFR 302.4 (b)

None

#### SARA 302 Components 0 40 CFR 355 Appendix A

None

#### Section 311 / 312 Hazard Class – 40 CFR 370.2

Immediate (X) Delayed ( ) Fire (X) Reactive ( ) Sudden Release of Pressure ( )  
Immediate for the molten liquid state only

## OSHA Process Safety Management 29 CFR 1910

None listed

## EPA Accidental Release Prevention 40 CFR 68

None listed

## State and Local Regulations

### California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986<>Use of Shurtape Pressure Sensitive Tape products poses no significant risk as defined by California Proposition 65<>

### EU Directives

94/62/EC – Packaging and Packaging Waste Directive and CONEG Model legislation for the restriction of metals in packaging. Complies with standard of less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb.

2002/95/EC – Restriction on the use of certain hazardous substances in electrical and electronic equipment. Complies with this standard with less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb. This product does not utilize brominated flame retardants.

## 16. OTHER INFORMATION

### US Green Building Council – LEED®

The following information addresses the allowable credits that may be claimed in accordance with Green Building Rating System for New Construction and Major Renovations, version 2.2

**Indoor Environmental Quality:** EQ Credit 4.1: Low-Emitting Materials (p. 69):

Adhesives & Sealants: Substrate Specific Applications:

Metal to Metal: VOC content < 30 g/l [in accordance with SCAQMD Rule #1168]

Actual VOC content: < 10 g/l [based upon testing conducted in accordance with SCAQMD Rule #1168]

Credit: 1 point

The following information addresses the allowable credits that may be claimed in accordance with LEED® for Homes Rating System

**Materials and Resources:** MR Credit 2.2: Environmentally Preferable Products:

Table 24 – Environmentally Preferable Products : Adhesives and Sealants (see Table 26)

Table 26 – Standards for Low-Emissions Adhesives and Sealants (meet SQAQMD Rule #1168)

Substrate Specific Applications:

Metal to Metal: VOC content < 30 g/l [in accordance with SCAQMD Rule #1168]

Actual VOC content: < 10 g/l [based upon testing conducted in accordance with SCAQMD Rule #1168]

Credit ½ point

As defined by the Code of Federal Regulations 1910. 1200, this product is considered to be an article, defined in the regulation as a “manufactured item other than a fluid or particle: (I) which is formed to a specific shape or design during manufacture; (II)

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has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (III) which does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.”

This information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable for their circumstances.

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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CHEMTREC -1-800-424-9300	CHEMTREC Customer Number: 20165													

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	<u>% Weight</u>
Foil/Scrim/Kraft Backing	Proprietary	40-50 %
Synthetic Rubber Adhesive	Proprietary	50-60 %

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

May cause skin or eye irritation by mechanical abrasion or by sensitivity to polymers.

Note: If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke. Exposure may cause irritation of the eyes, skin, and respiratory tract. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures should be taken to avoid exposure.

## 4. FIRST AID MEASURES

### Eyes

If wearing contact lenses, remove. Hold eyelids apart and immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

### Skin

Wash with soap and water. Seek medical attention if irritation develops or persists.

### Ingestion:

Do not give anything by mouth to an unconscious person. Seek medical attention.

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ISO 9000 CERTIFIED QUALITY SYSTEM

## Inhalation

Not applicable.

## 5. FIRE FIGHTING MEASURES

Flash Point (°F)	<i>Not Determined</i>
LEL	<i>Not Determined</i>

Auto Ignition Temp (°F)	<i>Not Determined</i>
UEL	<i>Not Determined</i>

### Hazardous Products of Combustion

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke.

### Fire and Explosion Hazards

Minimal fire hazard as supplied. Polymers in adhesive and polymer backed cloth will support combustion.

### Extinguishing Media

X	Foam	X	Water Spray	X	CO2	X	Dry Chemical
---	------	---	-------------	---	-----	---	--------------

### Fire Fighting Instruction

Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

Not applicable.

## 7. HANDLING AND STORAGE

### Handling

Material will be tacky/sticky. Recommend the use of light weight cloth or leather gloves for actual handling of material.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Eye Protection

Safety glasses with side-shields recommended

### Skin Protection

Normal lightweight work clothing will minimize skin contact. Use of lightweight cloth or leather gloves recommended.

### Respiratory Protections

No adverse respiratory exposure anticipated under normal use

**Engineering Controls**

No special engineering controls are required

**Exposure Guidelines**

Not applicable

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	N/A	Melting Point	N/A
Specific Vapor Density	N/A	Percent Volatiles	<1%
Specific Gravity	N/A	Evaporation Rate	N/A
Appearance	Silver	State	Solid at Ambient Temperature
Odor	No Strong odor	pH	N/A
Viscosity	N/A	Freezing Point	N/A
Molecular Weight	N/A	Solubility in H <sub>2</sub> O	negligible

## 10. STABILITY AND REACTIVITY

**Hazardous Polymerization**

Not anticipated under normal or recommended handling, use, or storage conditions.

**Hazardous Decomposition**

None anticipated under normal or recommended handling, storage, and use conditions.

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter and particulate matter. This is not the intended use for this product.

**Chemical Stability**

Stable

**Incompatibility**

Incompatible with: strong acids and oxidizing agents

## 11. TOXICOLOGICAL INFORMATION

Exposure to chemicals and possible effects will not occur with normal use.

## 12. ECOLOGICAL INFORMATION

No Data

## 13. DISPOSAL CONSIDERATION

## Waste Management Information

This material is considered to be non-hazardous under EPA's RCRA regulations. Dispose of per appropriate local regulations. Product is not recyclable.

## 14. DOT Information – 49 CFR 172.101

### DOT description:

Material is not a hazardous material when shipped

### Container / Mode:

Various size packages can be utilized for shipping this material

### NOS Component:

None

### RQ (Reportable Quantity) – 49 CFR 172.101

Product Quantity (lbs) - None

### Other Transportation Information

The DOT Transport Information may vary with the container and mode of shipment

## 15. REGULATORY INFORMATION

### US Federal Regulations

#### TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of the product are listed.

#### DSL (Canada)

The intentional ingredients of this product are listed.

#### CERCLA RQ – 40 CFR 302.4 (a)

None

#### CERCLA RQ – 40 CFR 302.4 (b)

None

#### SARA 302 Components 0 40 CFR 355 Appendix A

None

#### Section 311 / 312 Hazard Class – 40 CFR 370.2

Immediate (X) Delayed ( ) Fire (X) Reactive ( ) Sudden Release of Pressure ( )  
Immediate for the molten liquid state only



## OSHA Process Safety Management 29 CFR 1910

None listed

## EPA Accidental Release Prevention 40 CFR 68

None listed

## State and Local Regulations

### California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986<>Use of Shurtape Pressure Sensitive Tape products poses no significant risk as defined by California Proposition 65<>

### EU Directives

94/62/EC – Packaging and Packaging Waste Directive and CONEG Model legislation for the restriction of metals in packaging. Complies with standard of less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb.

2002/95/EC – Restriction on the use of certain hazardous substances in electrical and electronic equipment. Complies with this standard with less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb. This product does not utilize brominated flame retardants.

## 16. OTHER INFORMATION

### US Green Building Council – LEED®

The following information addresses the allowable credits that may be claimed in accordance with Green Building Rating System for New Construction and Major Renovations, version 2.2

**Indoor Environmental Quality:** EQ Credit 4.1: Low-Emitting Materials (p. 69):

Adhesives & Sealants: Substrate Specific Applications:

Metal to Metal: VOC content < 30 g/l [in accordance with SCAQMD Rule #1168]

Actual VOC content: < 25 g/l [based upon testing conducted in accordance with SCAQMD Rule #1168]

Credit: 1 point

The following information addresses the allowable credits that may be claimed in accordance with LEED® for Homes Rating System

**Materials and Resources:** MR Credit 2.2: Environmentally Preferable Products:

Table 24 – Environmentally Preferable Products : Adhesives and Sealants (see Table 26)

Table 26 – Standards for Low-Emissions Adhesives and Sealants (meet SQAQMD Rule #1168)

Substrate Specific Applications:

Metal to Metal: VOC content < 30 g/l [in accordance with SCAQMD Rule #1168]

Actual VOC content: < 25 g/l [based upon testing conducted in accordance with SCAQMD Rule #1168]

Credit ½ point

As defined by the Code of Federal Regulations 1910. 1200, this product is considered to be an article, defined in the regulation as a “manufactured item other than a fluid or particle: (I) which is formed to a specific shape or design during manufacture; (II) has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (III) which does not

Shurtape Technologies, LLC PO Box 1530 Hickory, NC 28603-1530 USA Phone 1.888.442.TAPE (8273) Fax 800.335.7651  
www.shurtape.com

**ISO 9000 CERTIFIED QUALITY SYSTEM**

release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.”

This information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable for their circumstances.

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

General Name: <b>DC 181 Series Pressure Sensitive Tape</b>	<b>HMIS III</b>		Icons: None
	DC 181 Series Pressure Sensitive Tape		
Shurtape Technologies, LLC	HEALTH	/ 1	
PO Box 1530	FLAMMABILITY	1	
Hickory, NC 28603-1530	PHYSICAL HAZARD	0	
(828) 322-2700	PERSONAL PROTECTION		B
Prepared Date: 19 June, 2008	Prepared By: EHS Group		
24-Hour Emergency Phone Number			
CHEMTREC -1-800-424-9300		CHEMTREC Customer Number: 20165	

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS Number	% Weight
Polypropylene Film	Proprietary	45-55%
Acrylic Adhesive	Proprietary	45-55%

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

Product will burn if ignited. May cause skin irritation by mechanical abrasion.

Note: If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke. Exposure may cause irritation of the eyes, skin, and respiratory tract. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures should be taken to avoid exposure.

## 4. FIRST AID MEASURES

### Eyes

If wearing contact lenses, remove. Hold eyelids apart and immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

### Skin

Wash with soap and water. Seek medical attention if irritation develops or persists.

### Ingestion:

Do not give anything by mouth to an unconscious person. Seek medical attention.

### Inhalation

Not applicable.

## 5. FIRE FIGHTING MEASURES

Flash Point (°F)	<i>Not Determined</i>
LEL	<i>Not Determined</i>

Auto Ignition Temp (°F)	<i>Not Determined</i>
UEL	<i>Not Determined</i>

### Hazardous Products of Combustion

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke.

### Fire and Explosion Hazards

Minimal fire hazard as supplied. Polymers in adhesive and polymer backed cloth will support combustion.

### Extinguishing Media

X	Foam	X	Water Spray	X	CO2	X	Dry Chemical
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### Fire Fighting Instruction

Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

Not applicable.

## 7. HANDLING AND STORAGE

### Handling

Material will be tacky/sticky. Recommend the use of light weight cloth or leather gloves for actual handling of material.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Eye Protection

Safety glasses with side-shields recommended

### Skin Protection

Normal lightweight work clothing will minimize skin contact. Use of lightweight cloth or leather gloves recommended.

### Respiratory Protections

No adverse respiratory exposure anticipated under normal use

### Engineering Controls

No special engineering controls are required

### Exposure Guidelines

Not applicable

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	N/A	Melting Point	900 - 1220°F
Specific Vapor Density	N/A	Percent Volatiles	<1%
Specific Gravity	~1	Evaporation Rate	N/A
Appearance	Various	State	Solid at Ambient Temperature
Odor	No Strong odor	pH	N/A
Viscosity	N/A	Freezing Point	N/A
Molecular Weight	N/A	Solubility in H <sub>2</sub> O	negligible

## 10. STABILITY AND REACTIVITY

### Hazardous Polymerization

Not anticipated under normal or recommended handling, use, or storage conditions.

### Hazardous Decomposition

None anticipated under normal or recommended handling, storage, and use conditions.

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter and particulate matter. This is not the intended use for this product.

### Chemical Stability

Stable

## Incompatibility

Incompatible with: strong acids and oxidizing agents

## 11. TOXICOLOGICAL INFORMATION

No Data

## 12. ECOLOGICAL INFORMATION

No Data

## 13. DISPOSAL CONSIDERATION

### Waste Management Information

This material is considered to be non-hazardous under EPA's RCRA regulations.

## 14. DOT Information – 49 CFR 172.101

### DOT description:

Material is not a hazardous material when shipped

### Container / Mode:

Various size packages can be utilized for shipping this material

### NOS Component:

None

### RQ (Reportable Quantity) – 49 CFR 172.101

Product Quantity (lbs) - None

### Other Transportation Information

The DOT Transport Information may vary with the container and mode of shipment

## 15. REGULATORY INFORMATION

### US Federal Regulations

#### TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of the product are listed.

#### DSL (Canada)

The intentional ingredients of this product are listed.

#### CERCLA RQ – 40 CFR 302.4 (a)

None

## CERCLA RQ – 40 CFR 302.4 (b)

None

## SARA 302 Components 0 40 CFR 355 Appendix A

None

## Section 311 / 312 Hazard Class – 40 CFR 370.2

Immediate (X) Delayed ( ) Fire (X) Reactive ( ) Sudden Release of Pressure ( )

Immediate for the molten liquid state only

## OSHA Process Safety Management 29 CFR 1910

None listed

## EPA Accidental Release Prevention 40 CFR 68

None listed

## State and Local Regulations

### California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986<>Use of Shurtape Pressure Sensitive Tape products poses no significant risk as defined by California Proposition 65<>

### EU Directives

94/62/EC – Packaging and Packaging Waste Directive and CONEG Model legislation for the restriction of metals in packaging. Complies with standard of less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb.

2002/95/EC – Restriction on the use of certain hazardous substances in electrical and electronic equipment. Complies with this standard with less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb. This product does not utilize brominated flame retardants.

## 16. OTHER INFORMATION

### US Green Building Council – LEED®

The following information addresses the allowable credits that may be claimed in accordance with Green Building Rating System for New Construction and Major Renovations, version 2.2

**Indoor Environmental Quality:** EQ Credit 4.1: Low-Emitting Materials (p. 69):

Adhesives & Sealants: Substrate Specific Applications:

Metal to Metal: VOC content < 30 g/l [in accordance with SCAQMD Rule #1168]

Actual VOC content: < 10 g/l [based upon testing conducted in accordance with SCAQMD Rule #1168]

Credit: 1 point

The following information addresses the allowable credits that may be claimed in accordance with LEED® for Homes Rating System

**Materials and Resources:** MR Credit 2.2: Environmentally Preferable Products:

Table 24 – Environmentally Preferable Products : Adhesives and Sealants (see Table 26)

Table 26 – Standards for Low-Emissions Adhesives and Sealants (meet SQAQMD Rule #1168)

Substrate Specific Applications:

Metal to Metal: VOC content < 30 g/l [in accordance with SCAQMD Rule #1168]

Actual VOC content: < 10 g/l [based upon testing conducted in accordance with SCAQMD Rule #1168]

Credit ½ point

As defined by the Code of Federal Regulations 1910. 1200, this product is considered to be an article, defined in the regulation as a “manufactured item other than a fluid or particle: (I) which is formed to a specific shape or design during manufacture; (II) has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (III) which does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.”

This information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable for their circumstances.



## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

General Name: <b>EV057 Polyvinyl Chloride Tape</b>	<table border="1"> <tr> <th colspan="3">HMIS III</th> </tr> <tr> <td colspan="3">EV 057 Polyvinyl Chloride Tape</td> </tr> <tr> <td>HEALTH</td> <td>1</td> <td rowspan="4">Icons: None</td> </tr> <tr> <td>FLAMMABILITY</td> <td>1</td> </tr> <tr> <td>PHYSICAL HAZARD</td> <td>0</td> </tr> <tr> <td>PERSONAL PROTECTION</td> <td>B</td> </tr> </table>		HMIS III			EV 057 Polyvinyl Chloride Tape			HEALTH	1	Icons: None	FLAMMABILITY	1	PHYSICAL HAZARD	0	PERSONAL PROTECTION	B
HMIS III																	
EV 057 Polyvinyl Chloride Tape																	
HEALTH	1	Icons: None															
FLAMMABILITY	1																
PHYSICAL HAZARD	0																
PERSONAL PROTECTION	B																
Shurtape Technologies, LLC PO Box 1530 Hickory, NC 28603-1530 (828) 322-2700																	
Prepared Date: 30 October, 2008	Prepared By: EHS Group																
24-Hour Emergency Phone Number CHEMTREC -1-800-424-9300 CHEMTREC Customer Number: 20165																	

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	<u>% Weight</u>
Vinyl Backing	Proprietary	50-60 %
Rubber Adhesive	Proprietary	40-50 %

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

May cause skin or eye irritation by mechanical abrasion or by sensitivity to polymers.

Note: If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke. Exposure may cause irritation of the eyes, skin, and respiratory tract. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures should be taken to avoid exposure.

## 4. FIRST AID MEASURES

### Eyes

If wearing contact lenses, remove. Hold eyelids apart and immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

### Skin

Wash with soap and water. Seek medical attention if irritation develops or persists.

### Ingestion:

Do not give anything by mouth to an unconscious person. Seek medical attention.

## Inhalation

Not applicable.

## 5. FIRE FIGHTING MEASURES

Flash Point (°F)	<i>Not Determined</i>
LEL	<i>Not Determined</i>

Auto Ignition Temp (°F)	<i>Not Determined</i>
UEL	<i>Not Determined</i>

### Hazardous Products of Combustion

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke.

### Fire and Explosion Hazards

Minimal fire hazard as supplied. Polymers in adhesive and polymer backed cloth will support combustion.

### Extinguishing Media

X	Foam	X	Water Spray	X	CO2	X	Dry Chemical
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### Fire Fighting Instruction

Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

Not applicable.

## 7. HANDLING AND STORAGE

### Handling

Material will be tacky/sticky. Recommend the use of light weight cloth or leather gloves for actual handling of material.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Eye Protection

Safety glasses with side-shields recommended

### Skin Protection

Normal lightweight work clothing will minimize skin contact. Use of lightweight cloth or leather gloves recommended.

### Respiratory Protections

No adverse respiratory exposure anticipated under normal use

## Engineering Controls

No special engineering controls are required

## Exposure Guidelines

Not applicable

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	N/A	Melting Point	N/A
Specific Vapor Density	N/A	Percent Volatiles	<1%
Specific Gravity	N/A	Evaporation Rate	N/A
Appearance	Black	State	Solid at Ambient Temperature
Odor	No Strong odor	pH	N/A
Viscosity	N/A	Freezing Point	N/A
Molecular Weight	N/A	Solubility in H <sub>2</sub> O	negligible

## 10. STABILITY AND REACTIVITY

### Hazardous Polymerization

Not anticipated under normal or recommended handling, use, or storage conditions.

### Hazardous Decomposition

None anticipated under normal or recommended handling, storage, and use conditions.

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter and particulate matter. This is not the intended use for this product.

### Chemical Stability

Stable

### Incompatibility

Incompatible with: strong acids and oxidizing agents

## 11. TOXICOLOGICAL INFORMATION

Exposure to chemicals and possible effects will not occur with normal use.

## 12. ECOLOGICAL INFORMATION

No Data

## 13. DISPOSAL CONSIDERATION

## Waste Management Information

This material is considered to be non-hazardous under EPA's RCRA regulations. Dispose of per appropriate local regulations. Product is not recyclable.

## 14. DOT Information – 49 CFR 172.101

### DOT description:

Material is not a hazardous material when shipped

### Container / Mode:

Various size packages can be utilized for shipping this material

### NOS Component:

None

### RQ (Reportable Quantity) – 49 CFR 172.101

Product Quantity (lbs) - None

### Other Transportation Information

The DOT Transport Information may vary with the container and mode of shipment

## 15. REGULATORY INFORMATION

### US Federal Regulations

#### TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of the product are listed.

#### DSL (Canada)

The intentional ingredients of this product are listed.

#### CERCLA RQ – 40 CFR 302.4 (a)

None

#### CERCLA RQ – 40 CFR 302.4 (b)

None

#### SARA 302 Components 0 40 CFR 355 Appendix A

None

#### Section 311 / 312 Hazard Class – 40 CFR 370.2

Immediate (X) Delayed ( ) Fire (X) Reactive ( ) Sudden Release of Pressure ( )  
Immediate for the molten liquid state only

## OSHA Process Safety Management 29 CFR 1910

None listed

## EPA Accidental Release Prevention 40 CFR 68

None listed

## State and Local Regulations

### California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986.

WARNING: This product contains one or more chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. <>

### EU Directives

94/62/EC – Packaging and Packaging Waste Directive and CONEG Model legislation for the restriction of metals in packaging. Complies with standard of less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb.

2002/95/EC – Restriction on the use of certain hazardous substances in electrical and electronic equipment. Complies with this standard with less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb. This product does not utilize brominated flame retardants.

## 16. OTHER INFORMATION

As defined by the Code of Federal Regulations 1910. 1200, this product is considered to be an article, defined in the regulation as a “manufactured item other than a fluid or particle: (I) which is formed to a specific shape or design during manufacture; (II) has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (III) which does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.”

This information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable for their circumstances.



## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

General Name: <b>PC 657 Pressure Sensitive Tape</b>	<table border="1"> <tr> <th colspan="3">HMIS III</th> </tr> <tr> <td colspan="3">PC 657 Pressure Sensitive Tape</td> </tr> <tr> <td>HEALTH</td> <td>1</td> <td rowspan="4">Icons: None</td> </tr> <tr> <td>FLAMMABILITY</td> <td>1</td> </tr> <tr> <td>PHYSICAL HAZARD</td> <td>0</td> </tr> <tr> <td>PERSONAL PROTECTION</td> <td>B</td> </tr> </table>		HMIS III			PC 657 Pressure Sensitive Tape			HEALTH	1	Icons: None	FLAMMABILITY	1	PHYSICAL HAZARD	0	PERSONAL PROTECTION	B
HMIS III																	
PC 657 Pressure Sensitive Tape																	
HEALTH	1	Icons: None															
FLAMMABILITY	1																
PHYSICAL HAZARD	0																
PERSONAL PROTECTION	B																
Shurtape Technologies, LLC																	
PO Box 1530																	
Hickory, NC 28603-1530																	
(828) 322-2700																	
Prepared Date: 18 September, 2008	Prepared By: EHS Group																
24-Hour Emergency Phone Number																	
CHEMTREC -1-800-424-9300	CHEMTREC Customer Number: 20165																

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS Number</u>	<u>% Weight</u>
Polyethylene	Proprietary	15-45 %
Cloth	Proprietary	5-15 %
Rubber	Proprietary	10-25 %
Hydrocarbon Resin	Proprietary	10-30 %
Filler	Proprietary	10-30 %

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

May cause skin or eye irritation by mechanical abrasion or by sensitivity to polymers.

Note: If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke. Exposure may cause irritation of the eyes, skin, and respiratory tract. Symptoms such as coughing, tearing, and irritation should be regarded as potentially hazardous and measures should be taken to avoid exposure.

## 4. FIRST AID MEASURES

### Eyes

If wearing contact lenses, remove. Hold eyelids apart and immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.

### Skin

Wash with soap and water. Seek medical attention if irritation develops or persists.

Shurtape Technologies, LLC PO Box 1530 Hickory, NC 28603-1530 USA Phone 1.888.442.TAPE (8273) Fax 800.335.7651  
www.shurtape.com

ISO 9000 CERTIFIED QUALITY SYSTEM

**Ingestion:**

Do not give anything by mouth to an unconscious person. Seek medical attention.

**Inhalation**

Not applicable.

## 5. FIRE FIGHTING MEASURES

Flash Point (°F)	<i>Not Determined</i>
LEL	<i>Not Determined</i>

Auto Ignition Temp (°F)	<i>Not Determined</i>
UEL	<i>Not Determined</i>

**Hazardous Products of Combustion**

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter, and smoke.

**Fire and Explosion Hazards**

Minimal fire hazard as supplied. Polymers in adhesive and polymer backed cloth will support combustion.

**Extinguishing Media**

X	Foam	X	Water Spray	X	CO2	X	Dry Chemical
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**Fire Fighting Instruction**

Wear a self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode with appropriate turn-out gear and chemical resistant personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

Not applicable.

## 7. HANDLING AND STORAGE

**Handling**

Material will be tacky/sticky. Recommend the use of light weight cloth or leather gloves for actual handling of material.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Eye Protection**

Safety glasses with side-shields recommended

**Skin Protection**

Normal lightweight work clothing will minimize skin contact. Use of lightweight cloth or leather gloves recommended.



## Respiratory Protections

No adverse respiratory exposure anticipated under normal use

## Engineering Controls

No special engineering controls are required

## Exposure Guidelines

Not applicable

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	N/A	Melting Point	900 - 1220°F
Specific Vapor Density	N/A	Percent Volatiles	<1%
Specific Gravity	~1	Evaporation Rate	N/A
Appearance	Various Colors	State	Solid at Ambient Temperature
Odor	No Strong odor	pH	N/A
Viscosity	N/A	Freezing Point	N/A
Molecular Weight	N/A	Solubility in H <sub>2</sub> O	negligible

## 10. STABILITY AND REACTIVITY

### Hazardous Polymerization

Not anticipated under normal or recommended handling, use, or storage conditions.

### Hazardous Decomposition

None anticipated under normal or recommended handling, storage, and use conditions.

If this product is subject to combustion it will undergo hazardous decomposition that will yield the formation and release of hazardous substances including but not limited to carbon dioxide, carbon monoxide, polycyclic organic matter and particulate matter. This is not the intended use for this product.

### Chemical Stability

Stable

### Incompatibility

Incompatible with: strong acids and oxidizing agents

## 11. TOXICOLOGICAL INFORMATION

No Data

## 12. ECOLOGICAL INFORMATION

No Data

## 13. DISPOSAL CONSIDERATION

## Waste Management Information

This material is considered to be non-hazardous under EPA's RCRA regulations.

## 14. DOT Information – 49 CFR 172.101

### DOT description:

Material is not a hazardous material when shipped

### Container / Mode:

Various size packages can be utilized for shipping this material

### NOS Component:

None

### RQ (Reportable Quantity) – 49 CFR 172.101

Product Quantity (lbs) - None

### Other Transportation Information

The DOT Transport Information may vary with the container and mode of shipment

## 15. REGULATORY INFORMATION

### US Federal Regulations

#### TSCA (Toxic Substances Control Act) Status

TSCA (UNITED STATES) The intentional ingredients of the product are listed.

#### DSL (Canada)

The intentional ingredients of this product are listed.

#### CERCLA RQ – 40 CFR 302.4 (a)

None

#### CERCLA RQ – 40 CFR 302.4 (b)

None

#### SARA 302 Components 0 40 CFR 355 Appendix A

None

#### Section 311 / 312 Hazard Class – 40 CFR 370.2

Immediate (X) Delayed ( ) Fire (X) Reactive ( ) Sudden Release of Pressure ( )

Immediate for the molten liquid state only

## OSHA Process Safety Management 29 CFR 1910

None listed

## EPA Accidental Release Prevention 40 CFR 68

None listed

## State and Local Regulations

### California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986<>Use of Shurtape Pressure Sensitive Tape products poses no significant risk as defined by California Proposition 65<>

### EU Directives

94/62/EC – Packaging and Packaging Waste Directive and CONEG Model legislation for the restriction of metals in packaging. Complies with standard of less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb.

2002/95/EC – Restriction on the use of certain hazardous substances in electrical and electronic equipment. Complies with this standard with less than 100 PPM total concentration Cd, Cr<sup>+6</sup>, Hg, and Pb. This product does not utilize brominated flame retardants.

## 16. OTHER INFORMATION

As defined by the Code of Federal Regulations 1910. 1200, this product is considered to be an article, defined in the regulation as a “manufactured item other than a fluid or particle: (I) which is formed to a specific shape or design during manufacture; (II) has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (III) which does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.”

This information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable for their circumstances.



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## SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Shurtape 947 Spray Adhesive  
Identification Number: FPASHUR947AD  
Product Use/Class:  
Supplier: Shurtape Technologies, Inc.  
1620 Highland Avenue, NE  
Hickory, NC 28601  
(828) 322-2700  
Prepared By: M. Hawes  
24-Hour Emergency Contact: CHEMTREC  
800-424-9300  
Replaces Date: 7 April 1997

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## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Item	Chemical Name	CAS Number	Wt./Wt. %	Exposure Information			
				NIOSH		OSHA	
				TWA	STEL	TWA	STEL
1	Hexane	110-54-3	<40.0%	50 PPM	No Info	500 PPM	No Info
2	Acetone	67-64-1	<20.0%	250 PPM	No Info	1000 PPM	No Info
3	Propane	74-98-6	<20.0%	1000 PPM	No Info	No Info	No Info
4	Isobutane	72-28-5	<10.0%	No Info	No Info	No Info	No Info

Note: TWA = Time Weighted Average  
STEL = Short Term Exposure Limit

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## SECTION 3: HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW:

Keep from reach of children. Do not puncture, incinerate, or place aerosol product containers in compactors. Containers of this material may be hazardous when emptied since containers retain product residues (vapor, liquid and/or solid.)

All hazard precautions given must be observed. Do not flame cut, braze or use welding torch. Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal.

Effects of overexposure- eye contact: can cause severe irritation, redness, tearing, and blurred vision.

### Effects of overexposure:

- **SKIN CONTACT:** prolonged or repeated contact can cause moderate irritation de-fatting, dermatitis.
- **INHALATION:** excessive inhalation of vapors can cause nasal and respiratory irritation, dizziness, weakness, fatigue, nausea and headache. Possible unconsciousness and even asphyxiation. Overexposure may cause damage to the nervous system.
- **INGESTION:** no information.
- **CHRONIC HAZARDS:** overexposure to this material (or its components) has apparently been found to cause the following effects in laboratory animals: kidney damage and eye damage.

Primary route(s) of entry: SKIN CONTACT, INHALATION AND EYE CONTACT.

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#### SECTION 4 – FIRST AID MEASURES

##### FIRST AID:

- EYE CONTACT: flush with large amount of water, lifting upper and lower lids occasionally, *GET MEDICAL ATTENTION*.
- SKIN CONTACT: thoroughly wash exposed area with soap and water. Remove contaminated clothing. Launder contaminated clothing before re-use. *GET MEDICAL ATTENTION IF IRRITATION PERSISTS*. Mineral oil, baby oil, makeup remover, mineral spirits or other similar mild solvents may be used to remove the sticky resin residue left by the adhesive.
- INHALATION: Immediately move individual to fresh air. If breathing is difficult, administer oxygen. Give artificial respiration if breathing has stopped. Keep person warm and quiet. *GET MEDICAL ATTENTION*.
- INGESTION: **DO NOT INDUCE VOMITING**. Give two glasses of water if conscious. Never give anything by mouth to an unconscious person. *GET IMMEDIATE MEDICAL ATTENTION*.

---

#### SECTION 5 – FIRE FIGHTING MEASURES

Flash Point ( <i>Pensky-Martens C.C.</i> ):	156°F
Lower Explosive Limit:	1.0%
Upper Explosive Limit:	12.8%
Auto ignition Temperature:	Not Determined
Extinguishing Media:	CO <sub>2</sub> , Dry Chemical, Foam, Water, Fog

- UNUSUAL FIRE AND EXPLOSION HAZARDS: vapors are heavier than air and travel along the ground or may be moved by ventilation and ignited by ignition sources at locations distant from material handling point. For aerosol products- exposure to temperatures over 130°F may cause containers to burst, releasing highly flammable gas.
- SPECIAL FIREFIGHTERS PROCEDURES: wear self-contained breathing apparatus with a full-face piece operated in pressure-demand or other positive pressure mode when fighting fires. Keep fire exposed containers cool with water fog.

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#### SECTION 6 – ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled:

Eliminate sources of ignition & ventilate area. Persons not properly equipped should be excluded from area. Stop spill at source-prevent spreading. Avoid inhalation of vapors. Avoid skin contact with liquid. Soak up on absorbent material and place into proper container for disposal. Use non-sparking scoops for flammable materials. Clean walking surfaces thoroughly to reduce slipping hazard.

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#### SECTION 7 – HANDLING AND STORAGE

- Handling: no information
- Storage: Do not store above 120°F. Do not store in direct sunlight. Keep away from heat sources, open flame and spark.

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## SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Engineering controls:** Provide sufficient mechanical ventilation (general and/or local exhaust) to maintain exposure below recommended TWA values.
- **Respiratory protection:** Should work place exposure limits of product or any component be exceeded, use a NIOSH/MSHA approved respirator. Consult your safety equipment supplier for recommendations.
- **Skin protection:** Wear gloves impervious or resistant to chemicals in product if method of use involves skin contact with product. Consult your safety supply vendor for glove recommendations.
- **Eye protection:** Wear safety glasses at minimum. Goggles are recommended. More extensive protection may be necessary depending on how the product is to be used.
- **Other protective equipment:** Wear clothing impervious or resistant to chemicals in product if bodily exposure is anticipated. Consult your safety supply vendor for recommendations.
- **Hygienic practices:** Wash hands before eating or smoking. Smoke in designated areas only. Remove and launder clothing if contaminated.

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## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Range:	44°-159°F
Vapor Density:	> 1
Odor:	Mint, when wet
Odor Threshold:	Not Determined
Appearance:	White Liquid
Evaporation Rate:	> Butyl Acetate
Solubility in H <sub>2</sub> O:	Negligible
Freeze Point:	Not Determined
Specific Gravity:	0.6822
Vapor Pressure:	Not Determined
pH @ 0.0%:	Not Applicable
Physical State:	Liquid
Viscosity:	Not Determined
Coefficient of water/oil distribution:	Not Determined

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## SECTION 10 – STABILITY AND REACTIVITY

- **CONDITIONS TO AVOID:** heat, sparks, welding arcs, open flame, static electricity or other source of ignition.
- **INCOMPATIBILITY:** acids and strong oxidizers.
- **HAZARDOUS DECOMPOSITION PRODUCTS:** carbon monoxide and carbon dioxide. Various hydrocarbons, acetic acid, sulfur dioxide, nitrogen oxide, nitrogen peroxide and sulfur monoxide.
- **HAZARDOUS POLYMERIZATION:** Will not occur under normal conditions.
- **STABILITY:** This product is stable under normal storage conditions.

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### SECTION 11 – TOXICOLOGICAL PROPERTIES

No product or component toxicological information is available.

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### SECTION 12 – ECOLOGICAL INFORMATION

Ecological information : No information.

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### SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal method: dispose of in accordance with all local, state and federal regulations.

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### SECTION 14 – TRANSPORTATION INFORMATION

DOT Proper Shipping Name:	Aerosols, Flammable, (each not exceeding 1 L Capacity)
DOT Hazard Class:	2.1
Hazard Subclass:	None
ERG Guide Book No.:	126
DOT UN No.:	UN1950
Packing Group:	None

Additional information: For domestic ground and air shipment this product may be shipped as a consumer commodity ORM-D. Outer cartons must have the ORM-D or ORM-D air designation. (Our original cartons are preprinted with the ORM-D designation foreground shipment).

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### SECTION 15 – REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS-

- ❖ OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
- ❖ CERCLA- SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories.
  1. Immediate Health Hazard
  2. Chronic Health Hazard
  3. Fired Hazard
  4. Pressurized Gas Hazard
- ❖ SARA SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Wt./Wt.%</u>
Hexane	110-54-3	<40.0%



- ❖ TOXIC SUBSTANCE CONTROL Act: This product contains the following chemical substances subject to the reporting requirements of TSCA 12 (B) if exported from the United States:

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Wt./Wt.%</u>
No Information Available		

INTERNATIONAL REGULATIONS: AS FOLLOWS –

- ❖ CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.
- ❖ CANADIAN WHMIS CLASS: No information available.

On June 30, 1993 the OSHA Z-I-A table was revoked and OSHA reverted back to their prior exposure limits. The values on this MSDS reflect the roll back to the prior values. Some states may continue to enforce the 1993 limits. On June 16, 1995 EPA announced in a final rule that acetone would no longer be considered a VOC for air attainment standards (it is now an exempt compound) not all states have adopted the exempt status of acetone at this time. The VOC calculations on this MSDS are based on acetone being an exempt compound. The June 16 rule also removed acetone from the list of SARA 313 reportable chemicals, effective the 1994 reporting year.

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**SECTION 16 – OTHER INFORMATION**

HMIS ratings

- HEALTH: 2
- FLAMMABILITY: 4
- REACTIVITY: 1

Previous MSDS revision date: April 7, 1997

Reason for revision: scheduled update

Volatile by weight: 81.0%

Volatile by volume: 86.9%

VOC content: 62.8% by weight, 428 grams/liter total products,  
508 grams/liter less water and exempt, 0.6 lb. per can

The information contained on the MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State and Local laws and regulations. Shurtape Technologies, Inc. has included the environmental information and hazardous material identification system in order to provide additional health and hazard classification information. The ratings recommend are based upon the criteria supplied by the developers of these rating systems, together with Shurtape Technologies, Inc.'s interpretation of the available data. Proper personal protective equipment varies widely with conditions of use and anticipated exposure. We recommend that a supervisor or other qualified person determine proper PPE for intended use.





April 9, 2008

To Whom It May Concern:

The OSHA Hazard Communication Standard, 29 CFR 1910.1200 effective 25 November 1985, requires the manufacturers or importers of certain hazardous chemicals or products to assess their products as to their hazard potential. Shurtape Technologies, Inc. has assessed the impact of the standard on **ALL** of our finished plastic products and pressure sensitive tapes. The conclusion, after a comprehensive review that included consultation with independent consultants, is that **ALL** of Shurtape's plastic products and pressure sensitive tapes are exempt from this standard. This exemption is based upon the premise that **ALL** of Shurtape's plastic products and pressure sensitive tapes are considered "**ARTICLES**" as defined in 29 CFR 1910.1200(b)(6)(v). An "**ARTICLE**," as defined in 29 CFR 1910.1200(c), "*means a manufactured item, other than a fluid or particle:*

- (i) which is formed to a specific shape or design during manufacture;*
- (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and*
- (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d)<sup>1</sup> of this section) and does not pose a physical hazard or health risk to the employee."*

Therefore, based on the above determinations, Material Safety Data Sheets (MSDS) are not required for any plastic products and pressure sensitive tapes manufactured or sold by Shurtape Technologies, LLC.

The raw material formulations and processes used in the manufacture of our plastic products and pressure sensitive tapes are considered proprietary. This standard provides for both the need to protect against potential exposure and the need to maintain confidentiality of proprietary information. The standard provides for the limited disclosure of certain proprietary information upon official request, either in a medical emergency or a non-emergency to a qualified health professional<sup>2</sup> under specific conditions of need and confidentiality. These health professionals would be furnished medical or other occupational health services in cases involving potential exposures. Since our plastic products and pressure sensitive tapes do not release or otherwise result in exposure to a hazardous chemical under normal recommended conditions of use, disclosure of proprietary materials and processes is available as described in the trade secret section of the standard.

While Shurtape Technologies, Inc. believes the information contained herein is accurate, it is not to be taken as a warranty or representation for which Shurtape Technologies, Inc. assumes any legal responsibility for product liability. This information is offered solely for our customers' consideration, investigation, and any necessary verification. Any use of this information or of the plastic products and pressure sensitive tapes provided by Shurtape Technologies, Inc. must be determined by the user to be acceptable for their intended purpose(s) and in accordance with the appropriate federal, state, or local laws and regulations including 29 CFR in its entirety.

Sincerely,

Mark E. Hawes, P.E.  
Director of Environment and Safety

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<sup>1</sup> Paragraph d, "Hazard Determination." is found in 29 CFR 1910.1200(d).

<sup>2</sup> Health professionals would be defined as physicians, industrial hygienists, toxicologists, epidemiologists, or occupational health nurses. These issues are specified in 29 CFR 1910.1200(i) "Trade Secrets."

**HOLD STRONG.**





Special Fire Fighting Procedures:

This product requires no known special procedures during a fire.

Fire fighters should be protected from direct physical contact with the product since the exact nature and amounts of possible contaminants during a fire will be unknown.

Unusual fire and Explosion Hazards:

NONE KNOWN

Section V - Reactivity Data

Stability: Stable

Conditions to Avoid:

NA

Incompatibility (Materials to Avoid):

Strong Oxidizing agents

Hazardous Decomposition or Byproducts:

CO, CO2, plus misc. unknowns in small amounts.

Hazardous Polymerization: May Not Occur

Conditions to Avoid:

NA

Section VI - Health Hazard Data

Route(s) of Entry:

Inhalation? Slight                      Skin? Slight                      Ingestion? Slight

Health Hazards (Acute and Chronic):

Acute and chronic health hazards are difficult to accurately assess for mixtures.

In general see the first aid section for acute effects and long term effects would have to be derived from these immediate results. Specific chronic effects can be studied from the individual hazardous chemicals as indicated under Section II as the best guess without extensive laboratory studies.

Carcinogenicity:

NTP? None Known      IARC Monographs? None Known      OSHA Regulated? None Known

Signs and Symptoms of Exposure:

This product may irritate eyes on contact, but no reaction is expected on skin contact. Oral ingestion may cause mild gastrointestinal distress.

Medical Conditions Generally Aggravated by Exposure:

A knowledge of the available toxicology information and of the physical properties of the material suggests that exposure is unlikely to aggravate existing medical conditions. However, due to the widely varying uses and personal exposures possible, an individual will have to evaluate his/her particular situation.

Emergency and First Aid Procedures:

EYES: Wash with water for 15 minutes, see a doctor

SKIN: Wash with water, apply skin lotion if redness persists.

OTHER: Wash mouth and other areas with water

See a doctor if ingested.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled:

Absorb small spills with suitable material (sand, clays, sawdust, earth) and place into leak-proof container for later disposal. Flush balance of area with water to remove residues. Dispose of all material in accordance with Federal, State, and Local laws.

Waste Disposal Method:

Since Federal, State, and local laws vary greatly from situation to situation, and since these materials are mixtures, no one preferred waste disposal method can be given. However, one must keep in mind that all of these type products are ultimately destined to go "down the drain" since they are cleaning compounds of one sort or another. Generally, in a highly diluted or completely neutralized state they present no particular environmental hazard, they can be treated as ordinary waste, which is piped to a sanitary sewer for proper waste treatment.

Neither the product nor its effluent should be discharged into any river, lake, stream, creek, or watershed that might contaminate drinking water or well water. Any discharge must be specifically permitted by the proper authority like the DEP or DER depending on your state laws.

Precautions to be Taken in Handling and Storing:

Do not freeze product. Do not subject product to excessive heat. Keep out of the reach of children. Do not contaminate food stuffs. Do not mix with any other chemicals except under direct supervision of a chemist, or technically trained supervisor. Mix only with water. During storage and transport of the product keep dry at all times, and do not exceed container integrity (i.e. improperly double or triple decking of palletized goods).

If sensitivity or aggravation of allergy, or unanticipated personal health problems become evident, stop use and see your supervisor. Keep in mind that often the use solution and the concentrate will have different safety precautions.

Other Precautions:

Laundry contaminated clothing before re-use. Discard all contaminated gloves, boots, and other articles that can not be properly cleaned.

Section VIII - Control Measures

Respiratory Protection (Specific Type):

Usually none needed.

Ventilation:

Local Exhaust:	Recommended	Special:	NA
Mechanical (General):	Usually sufficient	Other:	NONE KNOWN

Protective Gloves:

Light rubber gloves are recommended, I.e. Playtex type.

Eye Protection:

Safety glasses or chemical splash goggles are always recommended, as are eyewash foundations in all industrial processing areas.

Other Protective Clothing or Equipment:

Wear long sleeve shirts and pants. Launder dirty uniforms regularly. Wash or shower daily to maintain good cleanliness when in contact with various cleaning or water treating chemicals.

Work/ Hygienic Practices:

Non-Slip safety shoes with a splash apron are good practices to follow.  
 -----Start Clean-----Stay Clean-----End Clean = Work Safely.

 =====  
Section IX - Documentary Information  
 =====
Comments:

Section II Hazardous Material Section Percentage Key. If no hazardous chemicals are present then this section is not applicable.

NIL	-	0.0%	to	0.1%
Trace	-	0.1%	to	1.0%
Some	-	1.0%	to	5.0%
Minor Comp	-	5.0%	to	25.0%
Substantial	-	25.0%	to	50.0%
Major Comp	-	50.0%	to	100.0%

Substances listed in Section II are those identified as being present at a concentration of 1% or greater, or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication STD.

If section II does not contain any hazardous chemicals as presently defined in our applicable tables the message . . .

\*\*\*\*\*NO HAZARDOUS CHEMICALS\*\*\*\*\*

. . . will appear in this section above.

Note: For solid products, pH is taken of a 2% solution.

The information presented herein has been compiled from sources considered to be dependable and is accurate to the best of seller's knowledge or has been generated to the best of our ability without extensive research beyond our understanding or economical feasibility. Seller makes no warranty whatsoever expressed, implied, or of merchantability of the product or of results obtained from this report.

If you determine that the data does not meet your needs or that questions remain, consult your supplier before you purchase, store, transport or use this product.

Consult a technically trained service-person or salesman for use of this product as it specifically pertains to your situation. Seller assumes no responsibility for injury to buyer or to third persons or for any damage to property and buyer assumes all such risks.

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MATERIAL SAFETY DATA SHEET

IDENTITY: SQUICK

SQUICK PAGE 1

SECTION I Manufacturer's Information

Silver King Mfg. Co.  
620 Neshaminy Avenue  
P.O. Box 397  
Warrington, PA 18974

Emergency Phone Number: 215-343-5337  
Information Phone Number: 215-343-5337  
Updated: 04/22/1994  
DOT ID: 000000  
Chemical Family: Water Treatment Comp  
Hazard Class: NA

Section II - Hazardous Ingredients/Identity Information

Hazardous Components	CAS Number	OSHA PEL	ACGIH TLV	%
*****NO HAZARDOUS COMPONENTS*****				

Section III - Physical/Chemical Characteristics

Boiling Point:	NA	Specific Gravity (H2O=1):	NA
Vapor Pressure (mm Hg):	NA	Melting Point:	NA
Vapor Density (air=1):	NA	Evaporation Rate (water=1):	NA
Solubility in Water:		pH:	NA
Slight			
Appearance and Odor:			
TAN POWDER			
Practically no odor			

Section IV - Fire and Explosion Hazard Data

Flash Point: NA      Flammable Limits LEL: NA      UEL: NA  
Method Used:  
NONE  
Extinguishing Media:  
CO2, Water, Foam, Dry Chemical  
Special Fire Fighting Procedures:  
Protective clothing and pressure-demand, self-contained breathing apparatus should be worn by firefighters in areas where the product is stored, especially in a confined area.  
Unusual Fire and Explosion Hazards:  
DECOMPOSES TO SO2

Section V - Reactivity Data

Stability: Stable  
Conditions to Avoid: NA  
Incompatibility (Materials to Avoid): Strong acids and oxidizing agents  
Hazardous Decomposition or Byproducts: Sulfur dioxide.  
Hazardous Polymerization: May Not Occur  
Conditions to Avoid: NA

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 Section VI - Health Hazard Data
 

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## Route(s) of Entry:

Inhalation? Moderate      Skin? Moderate      Ingestion? Severe  
 Health Hazards (Acute and Chronic) :

Acute and chronic health hazards are difficult to accurately assess for mixtures. In general see the first aid section for acute effects and long term effects would have to be derived from these immediate results. Specific chronic effects can be studied from the individual hazardous chemicals as indicated under Section 11 as the best guess without extensive laboratory studies.

## Carcinogenicity:

NTP? None known    IARC Monographs? None known    OSHA Regulated? None known

## Signs and Symptoms of Exposure:

May cause skin irritation with sensitive individuals.

Will cause eye irritation, and possible mucous membrane irritation..

## Medical Conditions General Aggravated by Exposure:

A knowledge of the available toxicology information and of the physical properties of the material suggests that exposure is unlikely to aggravate existing medical conditions. However due to the widely varying uses and personal exposures possible, an individual will have to evaluate his/her particular situation.

## Emergency and First Aid Procedures:

EYES: Immediately wash eyes with water for at least 15 minutes.

Seek medical attention as soon as possible.

SKIN: Wash with soap and water, apply lotion if irritation continues.

INHALATION: Remove to fresh air, give oxygen if needed, or artificial respiration to maintain breathing. Get a doctor if indicated.

INGESTION: Wash out mouth and other contacted parts with water. Never give anything to an unconscious person. If conscious give one or two glasses of water and. ....

## INDUCE VOMITING BY:

- Place finger at back of victim's throat, or
- Use 2 teaspoons of salt in a glass of warm water, or  
 (10 gms salt in 200 ml warm water)
- Use one ounce of syrup of ipecac

When retching and vomiting begin, place the victim's face down with head lower than hips. This prevents vomitus from entering the lungs and causing further damage.

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 Section VII - Precautions for Safe Handling and Use
 

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## Steps to be Taken in Case Material is Released or Spilled:

Dry material should be swept up. Clean material should be reused or saved for the next use. Contaminated material should be swept up or shoveled up and placed in suitable containers for disposal as required, by an authorized waste operation.

## Waste Disposal Method:

For large quantities of sodium sulfite follow these disposal directions.

Dissolve in water, using caution as solution can get hot. Neutralize with acid and flush to sewer with plenty of water if permitted by applicable disposal regulations.

Good ventilation is required during neutralization due to release of SO<sub>2</sub> gas. Oxidation to sodium sulfate solution may be required, as for example, by adding a slight excess of dilute hydrogen peroxide carefully and with stirring. Neutralized waste may have to be disposed of by an approved contractor. Since Federal, State, and local laws vary greatly from situation to situation, and since these materials are mixtures, no one preferred waste disposal method can be given. One, however must keep in mind that all of these type products are ultimately destined to go "down the drain" since they are cleaning compounds of one sort or another. Generally, in a highly diluted or completely neutralized state they present no particular environmental hazard, they can be treated as ordinary waste, which is piped to a sanitary sewer for proper waste treatment.

The effluent from this product should NOT be discharged into any river, lake, stream, creek, or watershed that might contaminate drinking water or well water. Any discharge must be specifically permitted by the proper authority like the DEP, etc.

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:**

Do not freeze product. Do not subject product to excessive heat. Keep out of the reach of children. Do not contaminate food stuffs. Do not mix with any other chemicals except under direct supervision of a chemist, or technically trained supervisor. Mix only with water. During storage and transport of the product keep dry at all times, and do not exceed container integrity (i.e. improperly double or triple decking of palletized goods).

If sensitivity or aggravation of allergy, or unanticipated personal health problems become evident, stop use and see your supervisor. Keep in mind that often the use solution and the concentrate will have different safety precautions.

**OTHER PRECAUTIONS:**

Laundry all clothing before reuse. Discard all contaminated gloves, boots, and other articles that can not be properly cleaned.

-----  
Section VIII - Control Measures  
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Respiratory Protection (Specific Type):

If dusty, use mask for large volumes, i.e. 3M-8710 type.

Ventilation:

Local Exhaust:	Recommended	Special:	NA
Mechanical (General):	Recommended	Other:	None known

Protective Gloves:

Light rubber gloves for long use are recommended, i.e. Playtex type.

Eye Protection:

Safety glasses are always recommended, as are eyewash fountains in all processing areas.

Other Protective Clothing or Equipment:

Wear long sleeve shirts and pants. Launder dirty uniforms regularly. Wash or shower daily to maintain good cleanliness when in contact with various cleaning or water treating chemicals.

Work/Hygiene Practices

Non-slip work shoes with an apron are good practices to follow.  
-----Start Clean-----Stay Clean-----End Clean = Work Safely.

-----  
Section IX - Documentar Information  
-----

Comments:

Section II Hazardous Material Section Percentage Key. If no Hazardous

chemicals are present then this section is not applicable.

Nil	-	0.0%	to	0.1%
Trace	-	0.1%	to	1.0%
Some	-	1.0%	to	5.0%
Minor Comp-		5.0%	to	25.0%
Substantial-		25.0%	to	50.0%
Major Comp-		50.0%	to	100.0%

Substances listed in Section II are those identified as being present at a concentration of 1% or greater, or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication Std.

If Section II does not contain any hazardous chemicals as presently defined in our applicalbe tables the message.....

\*\*\*\*\*NO HAZARDOUS CHEMICALS\*\*\*\*\*

.....will appear in this section above.

The information presented herein has been compiled from sources considered to be dependable and is accurate to the best of seller's knowledge or has been generated to the best of our ability without extensive research beyond our understanding or economical feasibility. Seller makes no warranty whatsoever, expressed, implied, or of merchantability of the product or of results obtained from this report.

If you determine that the data does not meet your needs or that questions remain, consult your supplier before you purchase, store, transport, or use this product.

Consult a technically trained service-person or salesman for use of this product as it specifically pertains to your situation. Seller assumes no responsibility for injury to buyer or to third persons or for any damage to any property and buyer assumes all such risks.

Material Safety Data Sheet  
Brite Products  
14650 Dequindre  
Detroit, Mi 48212  
PH: (313)865-4380 FAX: (313)883-4930

SECTION 1 - CHEMICAL PRODUCT & COMPANY IDENTIFICATION

REVISED DATE: 05/08/06  
TRADE NAME: BRITE ZINC  
EMERGENCY NUMBER (USA) 1-800-424-9300

CODE IDENTIFICATION: B-100  
PRODUCT CLASS: AEROSOL COATINGS  
INTERNATIONAL EMERGENCY: 1-703-527-3887

"SECTION 2 - COMPOSITION, INFORMATION & INGREDIENTS"

ALIPHATIC PETROLEUM DISTILLATE CAS# 64742-89-8 PCT BY WT: 1.0000 EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL	LEL .90  300 PPM NO INFO	MINERAL SPIRITS CAS# 8052-41-3 PCT BY WT: 4.0000 EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL OSHA PEL-TWA COMPANY	LEL 1.10  100 PPM NO INFO 300 PPM N.E.
N-BUTANE CAS# 106-97-8 PCT BY WT: 5.0000 VAPOR PRESSURE: 879.100 MMHG @ 68 F EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL OSHA PEL-TWA COMPANY	LEL 1.80  800 PPM NO INFO 800 PPM N.E.	PROPANE CAS# 74-98-6 PCT BY WT: 15.0000 VAPOR PRESSURE: 5585.200 @ 68 F EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL	LEL 2.20  1000 PPM NO INFO
ZINC CAS# 7440-66-6 PCT BY WT: 18.0000 EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL	LEL 100.00  NO INFO NO INFO	TOLUENE CAS# 108-88-3 PCT BY WT: 8.000 PRESSURE: 38.000 MMHG@ 68F EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL OSHA PEL-TWA COMPANY	LEL 1.40  50 PPM NO INFO 50 PPM N.E.
ACETONE CAS# 6764-1 PCT BY WT: 11.0000 VAPOR PRESSURE: 185.000 MMHG @ 68 F EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL OSHA PEL-TWA OSHA PEL-STEL COMPANY	LEL 2.60  750 PPM 1000 PPM 750 PPM 1000 PPM N.E.	METHYL ETHYL KETONE CAS# 78-93-3 PCT BY WT: 11.0000 VAPOR PRESSURE: 85.000 MMHG @ 68F EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL OSHA PEL-TWA COMPANY	LEL 1.80  200 PPM 300 PPM 200 PPM N.E.
PETROLEUM NAPHTHA CAS# 8032-32-4 PCT BY WT: 12.0000 EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL OSHA PEL-TWA COMPANY	LEL .90  300 PPM NO INFO 300 PPM N.E.	ALUMINUM CAS# 7429-90-5 PCT BY WT: 2.0000 EXPOSURE LIMIT: ACGIH TLV-TWA ACGIH TLV-STEL	LEL 1.00  10 mg/m3 NO INFO

\*\*\*\*\*THIS PRODUCT CONTAINS NO REPORTED OR SUSPECTED CARCINOGENS\*\*\*\*\*

SECTION 3 - HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful if swallowed or inhaled. Causes eye and skin irritation. Vapors irritating to eyes and respiratory tract. Extremely flammable liquid and vapor. POTENTIAL HEALTH EFFECTS: May cause severe corneal injury if liquid comes in contact with the eyes. May cause skin irritation. Repeated and prolonged contact with the skin may cause allergic dermatitis. Exposure to high concentrations of "Vapors may cause dizziness, staggering, confusion, unconsciousness, coma or death. Vapor may be irritating to skin, eyes, throat or lungs." Intentional misuse by deliberately concentrating and inhaling the contents of this product can be harmful or fatal. Moderately toxic. May cause "Stomach discomfort, nausea, vomiting, diarrhea, and narcosis. Aspiration of material into the lungs if swallowed or if vomiting occurs can cause" chemical pneumonitis, which can be fatal. CHRONIC EFFECTS: Chronic overexposure to a component or components in this material has been found "To cause the following effects in laboratory animals: Kidney, eye, lung, liver and brain damage. Chronic overexposure to a component or components" in this product has been suggested as a cause of cardiac abnormalities in humans. Reports have associated repeated and prolonged overexposure permanent brain and nervous system damage. Repeated breathing or skin contact of methyl ethyl ketone may increase the potency of neurotoxins such as hexane if exposures occur at the same time.

#### SECTION 4 - FIRST AID MEASURES

"EYE CONTACT: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists. Flush with water for 15 minutes."

"SKIN CONTACT: Wash thoroughly with soap and water and seek medical attention. Remove contaminated clothing."

"INHALATION: For inhalation overexposure move person to fresh air. If breathing stops, apply artificial respiration and seek medical attention."

"INGESTION: Since this product may contain materials which can cause lung damage if aspirated into the lungs, the decision whether to induce vomiting or not must be made by a physician after careful consideration of all materials ingested."

#### SECTION 5 - FIRE FIGHTING MEASURES

FIRE AND EXPLOSIVE PROPERTIES OF THE PRODUCT:

FLASHPOINT	Less than -25 F	EXPLOSION LEVEL	Low	0.9 High	12.8
FLAMMABILITY LIMITS	Lower	N/A	Higher	N/A	

"EXTINGUISHING MEDIA: Use dry chemical, Carbon Dioxide or Chemical Foam. FIRE-FIGHTING PROCEDURES AND EQUIPMENT: Keep containers"

"tightly closed. Isolate from heat, sparks, and open flame. Closed containers may explode when exposed to extreme heat. Contents under pressure."

"Do not use or store near sources of heat, sparks or open flame. Keep away from any source of heat such as sunlight, heaters or stoves that could cause the container to burst. Do not puncture or incinerate. Do not crush or place in garbage compactor. Do not store above 120 degrees F. Aerosol containers may explode when exposed to extreme heat. Product vapors are heavier than air and may travel a long distance to a source of ignition and flash back. Full protective equipment including self-contained breathing apparatus to avoid inhalation of vapors should be used. Water spray

"should not be used except to keep down vapors or cool closed containers to prevent build-up of pressure. If water is used, fog nozzles are preferred."

#### SECTION 6 - ACCIDENTAL RELEASE MEASURES

"CLEAN-UP AND CONTAINMENT: Remove all sources of ignition. Avoid heat, sparks, flames and anything, which could cause fire. Ventilate area of spill and adjacent low lying areas. Avoid breathing solvent vapors. Remove with inert absorbent materials and non-sparking tools."

#### SECTION 7 - HANDLING AND STORAGE

HANDLING: Wash hands thoroughly after handling. STORAGE: Store in a cool dry area with ventilation suitable for storing materials shown in

"section 2. Keep away from heat, sparks and flame. Store in a cool place away from direct sunlight or any source of ignition. Do not store at" temperatures above 120 degrees F.

#### SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION"

"ENGINEERING CONTROLS: Sufficient ventilation, in volume and pattern, should be provided to keep air contamination below current applicable OSHA"

permissible exposure limit or ACGIH's TLV limit. RESPIRATORY PROTECTION: If workplace exposure limits are exceeded for any component (see "section 2 for hazardous components and exposure limits), a NIOSH/OSHA approved respirator suitable for components listed is recommended."

SKIN PROTECTION: Chemical resistant plastic or rubber gloves recommended for prolonged or repeated contact. EYE PROTECTION: Chemical goggles with side shields or face shields recommended if contact with the eyes is likely. OTHER PROTECTIVE EQUIPMENT: Appropriate impervious clothing is recommended if prolonged or repeated contact is likely. HYGIENIC PRACTICES: Wash hands before eating or smoking."

#### SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE	5585.200 mm Hg @ 20 C	FORMULA WT PER VOLUME	7.2584 LB/GL
VAPOR DENSITY	N/A	"VOC (Calculated, LB/GAL)"	5.188
BOILING RANGE	Lower 1.00 F	"VOC (Calculated, GM/L)"	621.67
	Higher 285.00 F	VOC Percent by Weight	73.0056
SPECIFIC GRAVITY	0.896	EVAPORATION RATE	7.70000 (n-Butyl Acetate = 1
		VISCOSITY	N/A

#### SECTION 10 - STABILITY AND REACTIVITY

"CONDITIONS TO AVOID: Avoid contact with heat, sparks, and open flame. Product may explode if heated. Keep cool, avoid exposure to heat."

"INCOMPATIBILITIES: Strong oxidizing agents. DECOMPOSITION: Thermal decomposition may produce carbon dioxide, carbon monoxide, and" unidentifiable organic materials. POLYMERIZATION: No hazardous polymerization will occur under normal conditions. STABILITY: The product is stable under normal storage conditions."

#### SECTION 11 - TOXICOLOGICAL INFORMATION

No specific information is available. Please refer to Section 3 for available information on potential health effects."

#### SECTION 12 - ECOLOGICAL INFORMATION

No specific ecological information is available for this product."

#### SECTION 13 - DISPOSAL CONSIDERATIONS

"WASTE DISPOSAL: Place in closed containers. Dispose of product in accordance with local, county, state, and federal regulations."

#### SECTION 14 - TRANSPORTATION INFORMATION

DOMESTIC GROUND: "Consumer Commodity, ORM-D" DOMESTIC AIR: " Consumer

Commodity, CLASS 9, ID 8000, MISC. LABEL"

INTERNATIONAL AIR: "AEROSOLS, FLAMMABLE, N.O.S. CLASS 2.1, UN 1950, FLAMMABLE GAS LABEL"

"See 49 CFR 172.101, Hazardous Materials Table 1 for more information on shipping hazardous materials on land. See IATA Dangerous Goods" Regulations for more details on shipping hazardous materials by air."

#### SECTION 15 - REGULATORY INFORMATION

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

ALUMINUM	CAS# 7429-90-5	PCT BY WT:	2.4380
ZINC	CAS# 7440-66-6	PCT BY WT:	20.2870
METHYL ETHYL KETONE	CAS# 78-93-3	PCT BY WT:	10.8790
TOLUENE	CAS# 108-88-3	PCT BY WT:	8.4230

FEDERAL REGULATIONS: TOXIC SUBSTANCES CONTROL ACT: The chemical substances in this product are listed on the TSCA Section 8 inventory

INTERNATIONAL REGULATIONS: CANADA: The chemical substances in this product are listed on the Canadian Domestic Substances List

#### SECTION 16 - OTHER INFORMATION

HMIS RATINGS: HEALTH: 2\* FLAMMABILITY: 4 REACTIVITY: 0 PERSONAL PROTECTION: G

CALIFORNIA MIR COMPLIANCE MET AT 1.11

# MATERIAL SAFETY DATA SHEET

CODE: M/L 1136

This Material Safety Data Sheet complies with the U.S. OSHA Hazard Communication Standard 29CFR 1910.1200

## PRODUCT: Butane Fuel



COMMON NAME OR SYNONYMS: Includes trade name products: Dutch Boy® - 1oz Butane Fuel

**TARACORP**

NFPA/HMIS HAZARD CODES: HEALTH: 1/1 FIRE: 4/4 REACTIVITY: 0/0 SPECIAL: NA

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

### SECTION I

#### SECTION I CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL FAMILY: Hydrocarbon, LP Gas  
CHEMICAL NAME: LP Gas, A-28  
FORMULA: C<sub>4</sub>H<sub>10</sub>  
PRODUCT CAS No: LIQUEFIED PETROLEUM GAS  
PRODUCT USE: Torch Fuel  
SUPPLIER: Taracorp  
ADDRESS: 1690 Lowery Street, Winston-Salem, NC 27101  
PHONE: (336) 777-8600

ISSUE DATE: March 2004  
EMERGENCY PHONE: 800-424-9300  
(Transportation/Chemtrec)

### SECTION II COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	VOLUME %
N, Butane, volume	106-97-8	22
Isobutane, volume	75-28-5	78

Note: The percentage by volume values reported for the ingredients in this product represent approximate formulation values.  
Note: See Section VIII for the Exposure Limits and Section XI for the Toxicological Information.

### SECTION III PHYSICAL DATA

Boiling Point -11.7F  
Pressure in can at 70°F Approx. 28 psig  
Vapor Density (Air=1) Greater than 2  
Solubility in water Less than 0.1% by weight @70F  
Specific Gravity (Water=1) 0.5676  
Percent Volatile by weight 100%  
Evaporation Rate (BuAcc=1) Gas  
Appearance and odor Liquefied compressed gas, flash evaporates at room temperature when released from can, colorless gas with strong mercaptan (skunk-like) odor due to stenching agent added to gas for leak detection purposes.

### SECTION IV HAZARDOUS REACTIVITY

Stability Stable when stored as a liquid in cans under its own pressure.  
Conditions to avoid Contact with sparks, open flame or any source of ignition.  
Hazardous Polymerization Will not occur  
Hazardous Decomposition Products May produce carbon monoxide when oxidized with deficiency of oxygen.

### SECTION V FIRE AND EXPLOSION DATA

Flammability Category Extremely Flammable (Reference - Consumer Product Commission, flame projection test for aerosol products, per 16 CFR 1500.45)  
Flash Point Less than -117°F  
Flammable Limits LEL% 1.8 UEL% 8.4  
Extinguishing Media If feasible, stop flow of gas. Use water to cool fire-exposed cans, surroundings and to protect personnel working on shut off. Water spray, dry powder or carbon dioxide can be directed at flame area, if gas flow cannot be stopped, to reduce fire intensity.  
**DO NOT COMPLETELY EXTINGUISH FLAME UNLESS GAS FLOW IS SHUT OFF!**  
Unusual Fire and Explosion Hazards This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads

easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches.

Special Fire Fighting Procedures

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus against the hazardous effects of normal products of combustion of oxygen deficiency. Petroleum gases are heavier than air and travel along the ground or into drains to possible distant ignition sources, causing an explosive flashback. Avoid possible accumulations of vapors at floor level, as vapor is heavier than air. Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals. This product is extremely flammable at all times. Keep away from any sources of inadvertent ignition, including heat, fire, sparks, or flame.

**SECTION VI HEALTH HAZARD INFORMATION**

Suggested Exposure Guideline: 1000 ppm  
Primary Route of Exposure: Inhalation, skin contact, eye contact  
Inhalation: This product is an asphyxiate and may exhibit anesthetic properties at very high concentrations. Initial symptoms of exposure at these concentrations are disorientation, lack of coordination, rapid respiration, headache, and nausea. Continued exposure may result in unconsciousness, coma, and possible death.  
Skin Contact: Vapors are not irritating. Freeze burns or frostbite possible if skin is in prolonged contact with vaporizing liquid.  
Eye Contact: Same as skin contact.  
Carcinogenicity: None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

**SECTION VII FIRST AID**

Inhalation: Remove to fresh air. Artificial respiration, consult physician.  
Skin Contact: Wash with soap and water. Remove soaked clothing to avoid prolonged skin contact.  
Eye Contact: Flush eyes well with running water for 15 minutes.  
Ingestion: NA, product is gaseous at normal temperature and pressure.

**SECTION VIII SPILL OR LEAK PROCEDURES**

Steps to be taken in case material is released or spilled: Protect from any ignition source, keep away from heat, fire, sparks, or flame. Ventilate area well. Avoid accumulation of vapor at low levels.  
Waste disposal method: Dispose of in accordance with all local, state and federal regulations. Do not puncture or incinerate.

**SECTION IX SPECIAL PROTECTION INFORMATION**

Respiration Protection: If TLV is exceeded wear NIOSH-approved self-contained breathing device or respirator.  
Ventilation: Must be adequate to maintaining airborne concentrations below established exposure limits, particularly at floor level as vapors are heavier than air.  
Protective gloves: None needed for normal use. Thermal insulated gloves when handling if prolonged exposure expected.  
Eye Protection: Safety glasses or goggles recommended

**SECTION X HANDLING AND STORAGE PRECAUTIONS**

Precautions to be taken in handling and storage: Do not store where temperature may exceed 120°F. Store away from fire, sparks, or flame. Store in suitable area for hazardous materials storage.  
D.O.T. Shipping Classification: Consumer Commodity, ORM-D  
Hazard Class: None  
ID Number: None  
Label Required: Carton must be marked - Consumer Commodity ORM-D

**SECTION XI SPECIAL PRECAUTIONS**

Do not use near heat, fire, flame or sparks. Avoid excessive breathing of vapor. Do not spray in direction of body. Use only in accordance with directions.

*Notice: This data represents typical values, not product specifications. No guarantee of accuracy or completeness is made. No responsibility is assumed for any kind of loss or damages arising from use of this data.*



**MATERIAL SAFETY DATA SHEET  
030****CODE: M/L**

This Material Safety Data Sheet complies with

the U.S. OSHA Hazard Communication

Standard 29CFR 1910.1200

**PRODUCT:TIN/ANTIMONY SOLDER ALLOY (FABRICATIONS.FORMS)****COMMON NAME OR SYNONYMS:** Tin/Antimony formulations in the following forms: wire, ingot, pig, sheet, anodes, cast or extruded bar and miscellaneous extruded lines. Includes trade name products: Taramet 95% SN/5% SB, Dutch Boy 95% SN/5% SB.**SECTION I****MANUFACTURERS NAME:** Taracorp/Imaco, Inc.**PREPARATION DATE:** June 1998

1690 Lowery Street

Winston-Salem, NC 27101

**INFORMATION PHONE :** 336-777-8600**SECTION II HAZARDOUS INGREDIENTS**

INGREDIENT	CAS NO.	US-NIOSH RTECS NO.	US OSHA AL	US OSHA PEL	ACGIH TLV	WT. PERCENT
Tin	7440-31-5	XP7320000	NE	2.0 mg/m3	2.0 mg/m3	90.0-98.0
Antimony	7440-36-0	CC4025000	NE	0.5 mg/m3	0.5 mg/m3	2.0-10.0

**NOTE:** Product formulation is to customer specification and appears on product packaging or packing slip.

NE=NONE ESTABLISHED AL=ACTION LEVEL PEL=PERMISSIBLE EXPOSURE LIMIT TLV=THRESHOLD LIMIT VALUE

**SECTION III PHYSICAL DATA**

<b>APPEARANCE &amp; ODOR (AT NORMAL CONDITIONS)</b>	:Solid - silver to silver gray metallic metal- No odor
<b>SPECIFIC GRAVITY (H2O=1)</b>	:5.77-5.84
<b>MELTING POINT RANGE (DEGREES F)</b>	:Tin-232 Antimony-630
<b>BOILING POINT (DEGREES C)</b>	:Tin-2260 Antimony-1380
<b>SOLUBILITY IN WATER</b>	:Insoluble
<b>EVAPORATION RATE (BUTYL ACETATE=1)</b>	:Not applicable
<b>VAPOR DENSITY (AIR=1)</b>	:Not applicable
<b>VAPOR PRESSURE (mmHg)</b>	:Not applicable
<b>PH</b>	:Not applicable

**SECTION IV EXPLOSION HAZARD DATA**

<b>FLASH POINT</b>	:Non-Flammable
<b>FLAMMABLE LIMITS</b>	:Not Applicable
<b>EXTINGUISHING MEDIA</b>	:No specific agents available

**SPECIAL FIRE FIGHTING PROCEDURES** :If involved in fire, use full protective clothing and NIOSHA/MSHA approved self-contained breathing apparatus operated in a positive-pressure mode.

**UNUSUAL FIRE & EXPLOSION HAZARDS** :The solid metal form is not a fire hazard. However, dust generated from processing operations may present a moderate fire or explosion hazard.

### SECTION V REACTIVITY DATA

**STABILITY** :Stable

**CONDITIONS TO AVOID** :Not Applicable

**INCOMPATIBILITY** :Chlorine, Turpentine, Strong Acids, bases, nascent hydrogen, reducing agents, chlorine, flourine and bromine.

**HAZARDOUS DECOMPOSITION PRODUCTS** :At temperatures above the melting point metal oxide fumes may be evolved. Under reducing conditions, such as any strong acid or base plus an active metal, or in the presence of nascent hydrogen, highly toxic stibine gas (TLV=0.10 ppm) may be evolved.

**HAZARDOUS POLYMERIZATION** :Will not occur.

### SECTION VI HEALTH HAZARD DATA

**NOTE:** Exposure to the solid form of this product presents few health hazards in itself. However, normal handling or processing of this material may result in the generation of tin and copper dusts and/or fumes, which may present a health hazard.

**ROUTES OF ENTRY** :Inhalation of dust/fume & ingestion of dust.

**SYMPTOMS & EFFECTS OF OVEREXPOSURE** :Chronic (prolonged) overexposure to tin can result in benign pneumoconiosos (stannosis). This form of pneumoconiosos produces progressive x-ray changes of the lungs as long as exposure exists, but there is no disctinctive fibrosis, no evidence of disability and no special complicating factors. :Chronic over exposure to antimony can lead to liver and lidney damage and central nervous system disorders. Antimony can cause eye and skin irritation and dermatitis.

Acute (severe short-term) overexposure to tin can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to antimony can cause upper respiratory tract irritation and systematic antimony poisoning with symptoms including abdominal cramps, nausea, dizziness, dry throat and varios nervous complaints, such as sleeplessness, irritability and muscular pains. Repeated skin contact with antimony may result in dermatitis, and eye contact may cause severe eye irritation.

### MEDICAL CONDITIONS POSSIBLE

**AGGRAVATED BY EXPOSURE** :Pre-existing conditons of the lungs, diseases of the lidneys, liver and nervous system.

**CARCINOGENITY** :Not listed as a carcinogen by NTP, IARC, OSHA, ACGIH

**EMERGENCY & FIRST AID PROCEDURES** **SKIN:** Normal hygiene procedures - wash with soap and water . If rash develops get medical attention.

**EYES:**Flush well with running water to remove particulate. If irritation persists get medical attention.

**INHALATION:**Remove from exposure. Get medical attention.

**INGESTION:** Give water; induce vomiting in a conscious individual; medical attention.

### SECTION VII PROTECTION MEASURES

**RESPIRATORY PROTECTION** :Respiratory protection is required where airborne exposures exceed US-OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the US OSHA Respiratory Protection Standard, 29CFR 1910.134.

**VENTILATION** :Ventilation, as described in "Industrial Ventilation, A Manual of Recommended Practice", by the American Conference of Governmental Industrial Hygienists, is recommended to maintain exposure levels below the permissible exposure limits (PEL's) or threshold limit values (TLV's) specified by US-OSHA or other local or state regulations.

**PROTECTIVE GLOVES** :Recommended for prolonged contact/heat. Required above the lead PEL.

**EYE PROTECTION** :Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes.

Safety glasses with faceshield are recommended around molten metal.

**OTHER PROTECTIVE EQUIPMENT** Safety equipment should be worn as appropriate for the work environment.

:Full protective clothing and shoes are required for employee exposure above the lead PEL. Other safety equipment should be worn as appropriate for the work environment. Keep work clothing separate from street clothes.

**WORK/HYGIENIC PRACTICES** :Do not permit eating, drinking, or the use of cosmetics or tobacco products while handling or processing material or in solder work areas. Practice good oral hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Full protective clothing is required to worn by workers exposed to concentrations of lead/dust fume above the PEL, and showering is required before changing into street clothes. Avoid inhalation and ingestion of product, and activities which generate dust or fume. Keep melting/soldering temperatures as low as possible to minimize the generation of fumes.

**SECTION VIII PRECAUTIONS FOR SAFE HANDLING & USE**

**PRECAUTIONS TO BE TAKEN**

**IN HANDLING & STORING** :Practice good housekeeping procedures to prevent dust accumulations. Keep material dry. Avoid storage near incompatible materials (See Section V). Keep product away from children and their environment.

**OTHER PRECAUTIONS** :Special attention is drawn to the requirements of the U.S. Respirator Standard (1910.134) should airborne exposures exceed the U.S. OSHA PEL.

**SECTION IX SPILL OR LEAK PROCEDURES**

**SPILL OR LEAK PROCEDURES** :1)Material in dust form-minimize exposure. Clean up using dustless methods (i.e. Vacuum). Do not use compressed air. 2)Place in closed labeled containers for recycling or disposal. 3)Keep out of waterways.

**NOTE:** Cleanup personnel should wear protective clothing and respiratory protection where significant dust/fume exposure exists.

**OTHER PROCEDURES** : We recommend that the purchaser establish a spill prevention, control and counter measure plan. This plan should include procedures for proper storage as well as clean-up of spills or leaks. The procedures should conform to safe practices and provide for proper recovery and/or disposal. Depending on the quantity spilled, notification to the U.S. National Response Center (800-424-8802) may be required in case of hazardous substances. (See USEPA and USDOT regulations:also various state and local regulations.)

**WATER DISPOSAL METHODS** :May have value on a recycled basis. If disposed of, dispose of in a permitted disposal site in accordance with all federal, state and local disposal or discharge regulations.

**SECTION X UNITED STATES SARA TITLE III INFORMATION**

This product/mixture contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of title III of the U.S. Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. The percent by weight of each toxic chemical and its associated chemical abstract system (CAS) number are to found in Section II of this Material Safety Data Sheet.

CHEMICAL NAME	EHS RQ (LBS)	EHS TPQ (LBS)	SEC.313	313 CATEGORY	311/312 CATEGORY
Antimony	*1 Not Applicable	*2 Not Applicable	*3 YES	*4 Antimony	*5 H-1, H-2

**-FOOTNOTES-**

\*1= Reportable quantity of extremely hazardous substance, Section 302.

\*2= Threshold planning quantity, extremely hazardous substance, Section 302.

\*3= Toxic chemical list, Section 313

\*4= Chemical category as required by Section 313 (40 CFR 372.42). Subject to annual release reporting requirements.

\*5= Hazard category for SARA Section 311/312 reporting:

Health H-1=Immediate (ACUTE) Health Hazard

Physical P-3= Fire Hazard

H-2=Delayed (CHRONIC) Health Hazard

P-4= Sudden Release of Pressure Hazard

**SECTION XI UNITED STATES CERCLA SECTION 103 INFORMATION**

This product/mixture contains the following chemicals subject to the release reporting of Section 302.

<b>CHEMICAL NAME</b>	RQ (LBS)
	(*1)
ANTIMONY	5000

**-FOOTNOTES-**

\*1= Reportable quantity (RQ) under CERCLA Section 302. Spills to the environment exceeding the reportable quantity in any 24 hour period must be reported to the U.S. National Response Center (800) 424-8802. No reporting of releases of the hazardous substance(s) is required if the diameter of the pieces of the solid metal(s) released is equal to or exceeds 100 micrometers (0.004 inches).

**SECTION XII USDOT TRANSPORTATION INFORMATION (172.101)**

DOT SHIPPING NAME	:This product is not regulated by the USDOT as shipped.
HAZARD CLASS	:NOT APPLICABLE
UN/ID NO.	:NOT APPLICABLE
DOT LABELS(S)	:NOT APPLICABLE

**SECTION XIII ADDITIONAL INFORMATION**

Some animal studies indicate that inhalation of antimony trioxide fume may pose an increased risk of Lung Cancer. ACGIH identifies antimony trioxide as a class A2 carcinogen (suspected human carcinogen). IARC classifies antimony trioxide as a Group 2B carcinogen (possibly carcinogenic to humans)

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. Taracorp/IMACO, Inc. provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.





**MATERIAL SAFETY DATA SHEET**

**M/L 041**

This Material Safety Data Sheet complies with the US-OSHA Hazard Communication Standard 29CFR 1910.1200 and the Hazardous Products Act of the Canada Labour Code

**PRODUCT: DUTCH-BOY LEAD-FREE SOLDER**

**SECTION I**

MANUFACTURERS NAME: TARACORP/IMACO, Inc.  
1690 Lowery Street PREPARATION DATE: June 1998  
Winston-Salem, NC 27101  
INFORMATION PHONE: (336)777-8600

**SECTION II HAZARDOUS INGREDIENTS**

INGREDIENT	CAS NO.	US-NIOSH RTECS NO.	US OSHA AL	US OSHA PEL	ACGIH TLV	WT. PERCENT
Tin	7440-31-5	XP7320000	NE	2.0mg/m3	2.0mg/m3	Balance
Copper	7440-50-8	GL5325000	NE	1.0 mg/m3	1.0 mg/mg3	4.95
				0.1 mg/m3	0.2 mg/m3	
Selenium	7782-49-2	VS7700000	NE	0.2 mg/m3	0.2 mg/m3	0.05

NE=NONE ESTABLISHED AL=ACTION LEVEL PEL=PERMISSIBLE EXPOSURE LIMIT TLV=THRESHOLD LIMIT VALUE

**SECTION III PHYSICAL DATA**

**APPEARANCE & ODOR (AT NORMAL CONDITIONS)** :Solid - silver to silver gray metallic metal- No odor  
**SPECIFIC GRAVITY (H20=1)** :7.39  
**MELTING POINT RANGE (DEGREES F)** :410-418  
**BOILING POINT (DEGREES C)** :Information not available  
**SOLUBILITY IN WATER** Insoluble  
**EVAPORATION RATE (BUTYL ACETATE=1)** :Not applicable  
**VAPOR DENSITY (AIR=1)** :Not applicable  
**VAPOR PRESSURE (mmHg)** :Not applicable  
**PH** :Not applicable

**SECTION IV EXPLOSION HAZARD DATA**

**FLASH POINT** :Non-Flammable  
**FLAMMABLE LIMITS** :Not Applicable  
**EXTINGUISHING MEDIA** :No specific agents available  
**SPECIAL FIRE FIGHTING PROCEDURES** :If involved in fire, use full protective clothing and NIOSHA/MSHA approved self-contained breathing apparatus operated in a positive-pressure mode.  
**UNUSUAL FIRE & EXPLOSION HAZARDS** :The solid metal form is not a fire hazard. However, dust generated from processing operations may present a moderate fire or explosion hazard.

**SECTION V REACTIVITY DATA**

**STABILITY** :Stable  
**CONDITIONS TO AVOID** :Not Applicable  
**INCOMPATIBLTY** :Chlorine, Turpentine, Magnesium, Acetylene Gas  
**HAZARDOUS DECOMPOSITION PRODUCTS** :At temperatures above the melting point metal oxide fumes may be evolved.  
**HAZARDOUS POLYMERIZATION** :Will not occur.

**SECTION VI HEALTH HAZARD DATA**

**NOTE:** Exposure to the solid form of this product presents few health hazards in itself. However, normal handling or processing of this material may result in the generation of tin and copper dusts and/or fumes, which may present a health hazard.  
**ROUTES OF ENTRY** :Inhalation of dust/fume & ingestion of dust.  
**SYMPTOMS & EFFECTS OF OVEREXPOSURE** :Chronic (prolonged) overexposure to tin can result in benign pneumoconiosis (stannosis). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors. Acute (severe short-term) overexposure to tin can cause irritation of the eyes, skin, mucous membranes and respiratory system. membranes Acute overexposure to Copper dusts or fumes can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. Copper may cause skin and hair discoloration. Inhalation of copper dusts may cause changes in the gums and mucous lining of the mouth which is generally attributable to localized tissue effect rather than general toxicity.  
**MEDICAL CONDITIONS POSSIBLE**  
**AGGRAVATED BY EXPOSURE** :Pre-existing conditions of the lungs. Wilson's Disease (Genetic Trait)

**CARCINOGENITY**  
**EMERGENCY & FIRST AID PROCEDURES**

:Not listed as a carcinogen by NTP, IARC, OSHA, ACGIH  
**SKIN:** normal hygiene procedures - wash with soap and water . If rash develops get medical attention.  
**EYES:** Flush well with running water to remove particulate. If irritation persists get medical attention.  
**INHALATION:** Remove from exposure. Get medical attention.  
**INGESTION:** Give water; induce vomiting in a conscious individual; get medical attention.

**SECTION VII PROTECTION MEASURES**

**RESPIRATORY PROTECTION** :Respiratory protection is required where airborne exposures exceed US-OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the US OSHA Respiratory Protection Standard, 29CFR 1910.134.  
**VENTILATION** :Ventilation, as described in "Industrial Ventilation, A Manual of Recommended Practice", by the American Conference of Governmental Industrial Hygienists, is recommended to maintain exposure levels below the permissible exposure limits (PEL's) or threshold limit values (TLV's) specified by US-OSHA or other local or state regulations.  
**PROTECTIVE GLOVES** :Recommended for prolonged contact/heat.  
**EYE PROTECTION** :Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes.  
Safety glasses with faceshield are recommended around molten metal.  
**OTHER PROTECTIVE EQUIPMENT** : Safety equipment should be worn as appropriate for the work environment.  
**WORK/HYGIENIC PRACTICES** :Do not permit eating, drinking, or the use of cosmetics or tobacco products while handling or processing material or in work areas. Practice good personal hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Avoid inhalation and ingestion of product, and low as possible to minimize the generation of fumes.

**SECTION VIII PRECAUTIONS FOR SAFE HANDLING & USE**

**PRECAUTIONS TO BE TAKEN**  
**IN HANDLING & STORING** :Practice good housekeeping procedures to prevent dust accumulations. Keep material dry. Avoid storage near incompatible materials (See Section V). Keep product away from children and their environment.  
**OTHER PRECAUTIONS** :Special attention is drawn to the requirements of the U.S. OSHA Respirator (1910.134) should airborne exposures exceed the U.S. OSHA PEL.

**SECTION IX SPILL OR LEAK PROCEDURES**

**SPILL OR LEAK PROCEDURES** :1)Material in dust form-minimize exposure. Clean up using dustless methods (i.e. Vacuum). Do not use compressed air. 2)Place in closed labeled containers for recycling or disposal. 3)Keep out of waterways.  
NOTE: Cleanup personnel should wear protective clothing and respiratory protection where significant dust/fume exposure exists.  
**OTHER PROCEDURES** : We recommend that the purchaser establish a spill prevention, control and counter measure plan. This plan should include procedures for proper storage as well as clean-up of spills or leaks. The procedures should conform to safe practices and provide for proper recovery and/or disposal. Depending on the quantity spilled, notification to the U.S. National Response Center (800-424-8802) may be required in case of hazardous substances. (See USEPA and USDOT regulations:also various state and local regulations.)  
**WATER DISPOSAL METHODS** :May have value on a recycled basis. If disposed of, dispose of in a permitted disposal site in accordance with all federal, state and local disposal or discharge regulations.

**SECTION X UNITED STATES SARA TITLE III INFORMATION**

This product/mixture contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of title III of the U.S. Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. The percent by weight of each toxic chemical and its associated chemical abstract system (CAS) number are to found in Section II of this Material Safety Data Sheet.

<b>CHEMICAL NAME</b>	<b>_EHS RQ (LBS)</b>	<b>EHS TPQ (LBS)</b>	<b>SEC.313</b>	<b>313 CATEGORY</b>	<b>311-312 CATEGORIES</b>
Copper	(*1)	(*2)	Yes	(*4)	(*5)

**-FOOTNOTES-**

- \*1= Reportable quantity of extremely hazardous substance, Section 302.
- \*2= Threshold planning quantity, extremely hazardous substance, Section 302.
- \*3= Toxic chemical list, Section 313
- \*4= Chemical category as required by Section 313 (40 CFR 372.42). Subject to annual release reporting requirements.
- \*5= Hazard category for SARA Section 311/312 reporting:  
Health H-1=Immediate (ACUTE) Health Hazard      Physical P-3= Fire Hazard  
H-2=Delayed (CHRONIC) Health Hazard              P-4= Sudden Release of Pressure Hazard



**SECTION XI UNITED STATES CERCLA SECTION 103 INFORMATION**

This product/mixture contains the following chemicals subject to the release reporting of Section 302.

<b>CHEMICAL NAME</b>	<b>RQ (LBS)</b>
	<u>(*1)</u>
Copper	5000

**-FOOTNOTES-**

\*1= Reportable quantity (RQ) under CERCLA Section 302. Spills to the environment exceeding the reportable quantity in any 24 hour period must be reported to the U.S. National Response Center (800) 424-8802. No reporting of releases of the hazardous substance(s) is required if the diameter of the pieces of the solid metal(s) released is equal to or exceeds 100 micrometers (0.004 inches).

**SECTION XII USDOT TRANSPORTATION INFORMATION (172.101)**

DOT SHIPPING NAME	:This product is not regulated by the USDOT as shipped.
HAZARD CLASS	:NOT APPLICABLE
UN/ID NO.	:NOT APPLICABLE
DOT LABELS(S)	:NOT APPLICABLE

**SECTION XIII ADDITIONAL INFORMATION**

NO ADDITIONAL INFORMATION

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. Taracorp/IMACO, Inc. provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.



**MATERIAL SAFETY DATA SHEET**

CODE: M/L1113

This Material Safety Data Sheet complies with  
the U.S. OSHA Hazard Communication  
Standard 29CFR 1910.1200

**PRODUCT: BERNZOMATIC WATER SOLUBLE FLUX**

NFPA/HMIS HAZARD CODES: HEALTH: 1/1 FIRE: 0/0 REACTIVITY: 0/0 SPECIAL: NA

0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**SECTION I IDENTIFICATION**

**SUPPLIER NAME:** Taracorp  
1690 Lowery Street  
Winston-Salem, NC 27101  
336-777-8600

**ISSUE DATE:** June 11, 2008

**SECTION II COMPOSITION INFORMATION**

INGREDIENT	CAS NO.	US OSHA PEL	%
Hydrochloric Acid	7647-01-0	5PPM	3-6
Zinc Chloride	7646-85-7	1PPM	1-3

**SECTION III HEALTH HAZARDS**

**EYES:** Flush with water for 10 minutes. Obtain immediate medical attention.  
**SKIN:** Wash thoroughly with water. If irritation develops, obtain medical attention.  
**ACUTE INHALATION:** Remove to fresh air or administer oxygen. Obtain immediate medical attention.  
**INGESTION:** Give water or milk. Obtain immediate medical attention.  
**PRIMARY ROUTES OF ENTRY:** Fume inhalation, ingestion, skin and eyes.  
**SYMPTOMS OF OVEREXPOSURE:** Salivation, coughing, choking, chills, may cause weight loss, brittle bones, anemia, and stiff joints.  
**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY OVEREXPOSURE:** Any weakness of the lungs, kidneys or liver will be aggravated.  
**CHEMICAL LISTED AS A CARCINOGEN OR POTENTIAL CARCINOGEN:** None

**SECTION IV FIRE AND EXPLOSION HAZARD DATA**

**FLASH POINT:** N/A  
**FLAMMABLE LIMITS:** N/A  
**EXTINGUISHING MEDIA:** Not needed  
**AUTO IGNITION TEMPERATURE:** None  
**SPECIAL FIRE FIGHTING PROCEDURES:** None  
**UNUSUAL FIRE & EXPLOSION HAZARDS:** Fluoride fumes

**SECTION V ACCIDENTAL RELEASE MEASURES**

**STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED:**  
Clean up paste and dilute/flush remaining materials with excess of water.

**SECTION VI HANDLING AND STORAGE**

**STORAGE REQUIREMENT:** Store in plastic containers in cool area, away from heat. Do not store in glass or porcelain container. Wash thoroughly after use.  
**HANDLING PRECAUTIONS:** Safe precautionary practices - avoid spills and exposure to skin and fume.

## SECTION VII CONTROL MEASURES

RESPIRATORY PROTECTION (TYPE):	NIOSH Approved Respirator
MECHANICAL (GENERAL):	Yes
EYE PROTECTION:	Safety glasses/goggles
PROTECTIVE GLOVES:	Recommended
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:	Optional to user's preference.
VENTILATION:	Yes
LOCAL EXHAUST:	Yes

## SECTION VIII PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT:	104°C	SPECIFIC GRAVITY (WATER=1):	.97
VAPOR PRESSURE (mm Hg):	N/A	PERCENT VOLATILE BY VOLUME:	64%
VAPOR DENSITY (AIR=1):	N/A	EVAPORATION RATE (BUTYL ACETATE=1):	0.6
MELTING POINT:	0°C	SOLUBILITY IN WATER:	Moderate
REACTIVITY IN WATER:	None	APPEARANCE AND ODOR:	White, odorless paste

## SECTION IX STABILITY AND REACTIVITY

STABILITY:	Product is stable
(CONDITIONS TO AVOID):	Metals
INCOMPATIBILITY:	Alkaline, strong oxidizing or reducing materials, cyanides or combustible materials.
HAZARDOUS DECOMPOSITION PRODUCTS:	HCl, zinc chloride, zinc oxide, ammonium fume
HAZARDOUS POLYMERIZATION:	Will not occur
(CONDITIONS TO AVOID):	Excessive heat or cold

## SECTION X TRANSPORTATION AND DISPOSAL CONSIDERATIONS

D.O.T. PROPER SHIPPING NAME:	Non-hazardous
WASTE DISPOSAL METHOD:	Dispose of in accordance with EPA regulations

## SECTION XI OTHER INFORMATION

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. Taracorp, Inc. provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.

**MORTAR / MASONRY CEMENT & SAND**

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**MATERIAL SAFETY DATA SHEET**

(Complies with OSHA CFR 1910.1200 ANSI Z 400.1-1998)

Approval Date: January 1, 2009

**SECTION 1: Chemical Product & Company Identification****Product Name: SPEC MIX® Masonry Cement & Sand Types M, N & S**

**Manufacturer Name and Address:** SPEC MIX® Inc.  
2025 Centre Pointe Blvd.  
Mendota Heights, MN 55120

**Telephone Contact Number and Hours of Operation:** (888) 773-2649; 8:00 a.m. – 4:00 p.m. Central Time

**Emergency Telephone Contact Number:** (800) 854-7820

**SECTION 2: Composition/Information on Ingredients**

<u>Hazardous Ingredients (*)</u>	<u>CAS No.</u>	<u>OSHA</u> TWA	<u>PEL</u> STEL	<u>ACGIH</u> TWA	<u>TLV</u> STEL
Calcium hydroxide (hydrated lime)	1305-62-0	15mg/m <sup>3</sup> (1) 5mg/m <sup>3</sup> (2)	NE	5mg/m <sup>3</sup>	NE
Masonry cement	65997-15-1	15mg/m <sup>3</sup> (1) 5mg/m <sup>3</sup> (2)	NE NE NE	10mg/m <sup>3</sup> NE	NE NE
Gypsum	13397-24-5	10mg/m <sup>3</sup>	NE		
Crystalline silica (sand and gravel)	14808-60-7	see 29 CFR 1910.1000 table z-3		0.05 mg/m <sup>3</sup> (3)	NE
Calcium sulfate	7778-18-9	15mg/m <sup>3</sup> (1) 5mg/m <sup>3</sup> (2)	NE	10mg/m <sup>3</sup>	NE
May also contain small amounts of:					
Yellow iron oxide	51274-00-1	15mg/m <sup>3</sup> (1) 5mg/m <sup>3</sup> (2)	NE	NE	NE
Chromium oxide	1308-38-9	0.5mg/m <sup>3</sup> (4)	NE	0.5mg/m <sup>3</sup> (3)	NE
Iron oxide (red iron oxide)	1309-37-1	10mg/m <sup>3</sup>	NE	5mg/m <sup>3</sup>	NE
Black iron oxide	1317-61-9	15mg/m <sup>3</sup> (1) 5mg/m <sup>3</sup> (2)	NE NE	NE	NE
Calcium carbonate (pulverized limestone)	1317-65-3	15mg/m <sup>3</sup> (1) 5mg/m <sup>3</sup> (2)	NE NE	10mg/m <sup>3</sup>	NE

1- PNOC (Particulate not otherwise classified) as total dust

2- PNOC as respirable fraction

3- As respirable fraction

4- Chromium (III) compounds as chromium

**\*All ingredients in quantities > 1.0% (0.1% for carcinogens) that are potentially hazardous per OSHA definitions**  
**NDA = no data available    NE = not established**

**Some states enforce the PELs that OSHA promulgated in 1989, which were subsequently vacated by the U.S. Supreme Court. Check with your state OSHA agency to determine which PEL is enforced in your jurisdiction.**

# MORTAR / MASONRY CEMENT & SAND

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## SECTION 3: Hazards Identification      EMERGENCY OVERVIEW

**Physical Description:** Natural gray solid

**Odor:** None

**Potential Health Effects: Warning!** Contact with wet mortar can burn eyes and skin. Permanent eye damage can result from eye contact. Dust from the dry material can cause severe irritation and possibly burns to the eyes and respiratory tract with coughing and nasal discharge. Lung damage and possibly pulmonary edema can result from dust exposure. Skin contact may not cause an immediate burning sensation. It is important to begin skin first-aid even if there is no immediate burning sensation. Repeated or prolonged skin contact may cause skin allergic reactions. Personnel responding to a spill of this material should wear appropriate personal protective equipment.

<b>Fire Hazards:</b>	<b>NFPA Ratings:</b>	Health = 2	Fire = 0	Reactivity = 0	Special = NDA
	<b>HMIS Ratings:</b>	Health = 2	Fire = 0	Reactivity = 0	Protective Equipment = X

## SECTION 4: First Aid Measures

**Note:** Signs and symptoms of skin burns may be delayed. Begin first aid immediately following skin contact even if there is no immediate burning sensation.

**Eye Contact:** Hold eye open and rinse slowly and gently with water for 30 minutes. Remove any contact lenses (if easy to do), after the first 5 minutes then continue rinsing the eye. Get medical attention immediately.

**Skin Contact:** Flush affected area for 20 minutes then wash affected area with mild soap and water. Get medical attention immediately.

**Ingestion:** Get medical attention immediately. Immediately rinse mouth with plenty of water. Have person sip a glass of water if able to swallow — **NEVER** give anything by mouth to an unconscious person. Do not induce vomiting.

**Inhalation:** Remove to fresh air. Seek medical attention immediately if breathing becomes difficult.

## SECTION 5: Fire Fighting Measures

**Extinguishing Media:** Noncombustible. Use media suitable for surrounding fire.

**Flashpoint:** NDA

**Hazardous Products of Combustion:** Calcium oxide fumes.

**Auto Ignition Temperature:** NDA

**Flammable Limits:** LEL;NDA UEL; NDA

**Unusual Fire and Explosion Hazards:** None known.

**Protective Equipment:** Use NIOSH/MSHA approved SCBA and bunker gear.

## SECTION 6: Accidental Release Measures

Do not attempt to clean up chemical spills without appropriate personal protective equipment (see section 8). For a spill of the dry material, use a HEPA (high efficiency particle air) vacuum to collect material and place in sealable containers for disposal. For a wet spill, absorb or cover with dry earth, sand or other noncombustible material and transfer to containers for disposal. Neutralize spill area. Use materials that can withstand the potentially corrosive nature of this product. Do not get water inside containers. See Disposal Comments in Section 13.

## SECTION 7: Handling and Storing

**Handling:** Avoid contact with eyes and skin. Avoid generating and breathing dusts. Dust may be generated from cutting, grinding, drilling, sawing, or otherwise disturbing hardened concrete. Use with proper personal protective equipment (see Section 8).

**Storage:** Store upright in a cool, dry, well-ventilated area out of direct sunlight. Protect containers from physical damage. Do not roll containers. Keep containers tightly closed at all times. Do not reuse container. Store away from incompatible materials (see Section 10). Keep out of reach of children.

# MORTAR / MASONRY CEMENT & SAND

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## SECTION 8: Exposure Controls and Personal Protective Equipment

**Engineering Controls:** If industrial hygiene surveys show that exposures exceed TLVs or other exposure limits, use a combination of local exhaust and general dilution/ventilation to control exposures. If that is not feasible, see recommendations under "Respiratory Protection."

**Skin:** Wear safety glasses with side shields and goggles or face shield.

**Respiratory Protection:** NIOSH approved N-95 cartridge respiratory protection is necessary if any of the standards in Section 2 are exceeded. Seek professional advice prior to respirator selection or use. Follow OSHA respirator regulations (29 CFR 1910.134). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection

**Safety Equipment:** Eyewash and deluge shower.

## SECTION 9: Physical and Chemical Parameters

**Physical State:** Solid

**Odor:** None

**Vapor Density (air = 1):** NDA

**Percent Volatile By Volume:** NDA

**Melting Point:** NDA

**Viscosity:** NDA

**Bulk Density:** NDA

**PH:** 12-13 (in water)

**Appearance:** Natural gray

**Vapor Pressure:** NDA

**Evaporation Rate (n-butyl acetate = 1):** NDA

**Freezing Point:** NDA

**Boiling Point:** NDA

**Specific Gravity:** NDA

**Solubility:** Slightly soluble in water

## SECTION 10: Stability and Reactivity

**Stability:** Stable

**Incompatible Materials and Conditions to Avoid:** Avoid strong acids. Silica will dissolve in hydrofluoric acid and produce a corrosive gas silicone tetra fluoride. Contact with oxidizing agents such as fluorine, chlorine tetra fluoride, manganese trioxide, and oxygen difluoride may cause fires. Calcium hydroxide has been reported to undergo violent reactions with maleic anhydride, nitroethane, nitromethane, nitroparaffins, nitropropane, and phosphors.

**Hazardous Polymerization:** Not expected.

**Hazardous Decomposition products:** Oxides of calcium

## SECTION 11: Toxicological Information

**Product Based Information:** There are limited toxicological data available for this product. Exposure can occur with the dry product, the wetted product, or to dusts when hardened mortar is ground, cut, drilled, sanded or otherwise disturbed. Routes of exposure include inhalation, eye and skin contact, and ingestion. Inhalation of the dusts of the dry product or from the disturbed hardened product can cause respiratory tract irritation with coughing and nasal discharge. Shortness of breath and reduced pulmonary function may also result from inhalation. Alveolar damage and pulmonary edema resulted in animal studies from exposure to the dry product.

This product contains crystalline silica. Prolonged overexposure to quartz or crystalline silica dust can cause pneumoconiosis, silicosis (a permanent fibrotic lung disease) and potentially lung cancer. Dust can cause inflammation of the lining tissue in the nose and inflammation of the cornea. Eye contact with the wet or dry product can cause burns and permanent damage to the eyes. Skin contact with the wet product can cause burns (corrosive). Repeated or prolonged skin contact with the wet product can cause drying of the skin, dermatitis and possibly allergic skin reactions. Skin contact with the dry product can cause irritation and possibly burns. Ingestion of either the wet or dry product is expected to cause severe irritation and likely burns to the mouth, throat, esophagus, and possibly the stomach. Nausea, vomiting and diarrhea may also occur. There were no data located addressing potential reproductive, developmental, or mutagenic effects following exposure to this product.

**MORTAR / MASONRY CEMENT & SAND**

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**Ingredient Based Information:**

This product contains Portland cement (CAS# 65995-15-1). Portland cement essentially contains five compounds:

$3\text{CaO}\cdot\text{SiO}_2$	Tricalcium Silicate	CAS #12168-85-3
$2\text{CaO}\cdot\text{SiO}_2$	Dicalcium Silicate	CAS #10034-77-2
$3\text{CaO}\cdot\text{Al}_2\text{O}_3$	Tricalcium Aluminate	CAS #12042-78-3
$4\text{CaO}\cdot\text{Al}_2\text{O}_3\cdot\text{Fe}_2\text{O}_3$	Tetracalcium Aluminoferrite	CAS #12068-35-8
$\text{CaSO}_4\cdot 2\text{H}_2\text{O}$	Calcium Sulfate Dihydrate (Gypsum)	CAS #778-18-9(# 13397-24-5)

The Portland cement may contain trace quantities (<0.05%) amounts of chromium salts or compounds (including hexavalent chromium) or other metals (including nickel compounds). Other trace constituents may include potassium and/or sodium sulfate compounds. Exposure can occur by eye or skin contact, inhalation, or ingestion. Eye contact can cause irritation. Portland cement is considered a primary skin irritant. Repeated or prolonged skin contact can cause dermatitis. Skin sensitivity may occur if hexavalent chromium is present. Inhalation of dusts may cause dyspnea based on a cross sectional study of 2736 Portland cement workers and 755 controls. In this study, 5.4% of the cement workers had dyspnea v.s. 2.7% of the controls. Ingestion can cause irritation to the mouth, throat, esophagus and stomach with nausea, vomiting and diarrhea. Data located were inconclusive regarding the association between occupational exposure to Portland cement and various cancers (e.g., stomach and lung). No data were located addressing potential reproductive or developmental affects following occupational exposure. Portland cement contains calcium sulfate (CAS# 7778-18-9). Calcium sulfate, when added to water may exist in more hydrated forms. Exposure to calcium sulfate can occur by inhalation, ingestion and eye and skin contact. Inhalation of calcium sulfate dust causes upper respiratory tract irritation primarily as a nuisance dust. Data from human occupational exposures indicate that calcium sulfate caused no lung disease in calcium sulfate miners. Ingestion may result in abdominal pain, vomiting or diarrhea. Ingestion of large amounts could cause obstruction of the gut in the pyloric region. Skin contact with calcium sulfate is not expected to cause irritation. However, skin contact with more hydrated forms of calcium sulfate may cause thermal burns during the hardening process. Eye contact with calcium sulfate may result in mechanical irritation. No adverse affects were reported after application of calcium sulfate to rabbit eyes. Calcium sulfate dihydrate was shown to cause carcinogenic effects in one study. There were no additional data located regarding the potential carcinogenic, reproductive or developmental effects following exposure to calcium sulfate.

This product contains calcium hydroxide (CAS# 1305-62-0). Calcium hydroxide is a strong base and a moderately caustic irritation to all exposed body surfaces, including the eyes and the respiratory tract. Exposure by all routes causes moderate to severe irritation. Eye contact can cause burns. Ingestion is expected to cause nausea, vomiting and diarrhea along with irritation to the mouth, throat, esophagus, stomach and gastrointestinal tract. The rat-oral LD50 is 7340 mg/kg. Rats fed tap water containing 50 and 350 mg/L had reduced food intake with restlessness and aggression 2 months after exposure, and decreased body weight, decreased erythrocytes and phagocytes and hemoglobin 3 months after exposure. At autopsy these animals had inflammation of the small intestine, dystrophic changes of the stomach, kidneys and liver. There were no data located regarding potential reproductive, developmental or carcinogenic effects following exposure.

This product contains crystalline silica (CAS# 14808-60-7). Silica (crystalline) is a composed of colorless crystals. Inhalation of crystalline silica is the most significant route of exposure. Inhalation of crystalline silica can lead to silicosis. Silicosis is a disabling, progressive and sometimes fatal lung disease that is characterized by the presence of typical nodulation of the lungs leading to fibrosis. Inhalation of high concentrations of crystalline silica over a short period of time (as little as a few weeks) can cause acute silicosis. Signs and symptoms of acute silicosis include progressive tiredness, fever, weight loss, cough and shortness of breath, wheezing, changes in the chest x-ray, and nonspecific chest illness. In acute silicosis, the lungs show a diffuse ground-glass appearance similar to pulmonary adema and lacking in the nodular pattern in the lungs. Chronic inhalation of lower concentrations can result in silicosis that develops and lasts over many months or years. Those with existing respiratory or lung problems may be at an increased risk from exposure. Clinical signs and symptoms of silicosis generally progress with continued exposure, advancing age, and continued smoking habits. Clinical signs and symptoms of silicosis include cough, tiredness, wheezing, and nonspecific chest illnesses. Symptoms may continue to worsen even after exposure is stopped. The risk of onset of silicosis and the progression to pulmonary lesions is related to the dust concentrations and duration of exposure. Silicosis predisposes to active tuberculosis with the combined diseases progressing more rapidly than silicosis alone. The crystalline silica that remains in the lungs can also cause emphysema, obstructive airway disease and lymph node fibrosis in humans. Occupational exposure to crystalline silica has been associated with lung cancer in some studies.



## MORTAR / MASONRY CEMENT & SAND

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Exposure to crystalline silica dust has also been associated with progressive systemic sclerosis (scleroderma) and may cause perturbations in the immune system based on human data and animal studies. Crystalline silica has been shown to inhibit human leukocyte elastase in, *in vitro* studies. This may result in a decrease in bactericidal activity and set the stage for opportunistic infections. IARC has determined that crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC group 1). The National Toxicology Program considers crystalline silica a known human carcinogen. There are no data located addressing reproductive or developmental hazards of silica (crystalline) exposure.

This product contains calcium sulfate (CAS# 7778-18-9). Calcium sulfate, when added to water may exist in more hydrated forms. Exposure to calcium sulfate can occur by inhalation, ingestion and eye and skin contact. Inhalation of calcium sulfate dust causes upper respiratory tract irritation primarily as a nuisance dust. Data from human occupational exposures indicate that calcium sulfate caused no lung disease in calcium sulfate miners. Ingestion may result in abdominal pain, vomiting or diarrhea. Ingestion of large amounts could cause obstruction of the gut in the pyloric region. Skin contact with calcium sulfate is not expected to cause irritation. However, skin contact with more hydrated forms of calcium sulfate may cause thermal burns during the hardening process. Eye contact with calcium sulfate may result in mechanical irritation. No adverse effects were reported after application of calcium sulfate to rabbit eyes. Calcium sulfate dihydrate was shown to cause carcinogenic effects in one study. There were no additional data located regarding the potential carcinogenic, reproductive or developmental effects following exposure to calcium sulfate.

This product may contain chromic acid green (CAS# 1308-38-9). Chromic acid green is a trivalent chromium pigment. Exposure can occur by inhalation of dusts, eye or skin contact, or ingestion. Data located indicates that inhalation of chromic acid green is unlikely to cause adverse respiratory. Eye or skin contact may cause irritation. Ingestion may cause stomach upset with nausea, vomiting and diarrhea. In one study, administration of 2 or 5% of chromic acid green in the diet of rats for 90 days produced no signs of toxic effects or adverse developmental effects. IARC has determined that trivalent chromium compounds are not classifiable as to their carcinogenicity (IARC).

This product may contain small amounts of iron oxide fume (CAS# 1309-37-1), yellow iron oxide (CAS# 51274-00-1) and black iron oxide (CAS# 1317-61-9). Exposure to iron and iron compounds can occur by ingestion, inhalation of dusts or fumes, or eye or skin contact. Ingestion of significant amounts of iron containing compounds is of significant concern but is unlikely in an occupational setting. Inhalation of dusts or fumes of iron oxide may cause mild upper respiratory irritation. Repeated or chronic inhalation of dusts or fumes can cause mottling of the lungs, a condition known as siderosis. Siderosis is generally considered a benign pneumoconiosis and does not usually cause significant physiologic impairment. Skin contact with iron or iron compounds is not expected to cause irritation. Metallic iron bodies in the eye can produce a "rust ring" of yellow brown staining and cause irritation, hyperemia of the conjunctiva and inflammatory cells in the anterior chamber. There were no data located addressing the mutagenicity of iron and iron compounds. Most available data indicate that adverse developmental effects following ingestion of iron, iron oxide or iron compounds given during pregnancy are not likely. There were no data located addressing the potential carcinogenic effects following exposure to iron or iron compounds.

This product may contain calcium carbonate (CAS# 1317-65-3). Calcium carbonate is an odorless, tasteless powder or crystal. In general, there have been no adverse health effects reported in the literature among workers using calcium carbonate. Skin or eye contact with moderate amounts of calcium carbonate may result in irritation. Calcium carbonate had no effect when applied to the surface of rabbit eyes. Inhalation of large amounts may result in respiratory irritation. Calcium carbonate has not been associated with pneumoconiosis and inhalation of the dust has not been associated with adverse effects. Acute single ingestion of calcium carbonate may result in mild gastrointestinal distress. The rat-oral LD50 for calcium carbonate is 6450mg/kg. Chronic ingestion of large amounts (4-60g/day for 2 to 30 days) may result in metabolic disturbances. Available data indicate that exposure to calcium carbonate is not expected to cause carcinogenic, reproductive, or developmental effects.

**Possible Target Organs:** All tissues (possibly corrosive) and respiratory system (e.g., lungs).

**Medical Conditions that may be Aggravated by Exposure:** Skin (e.g., sensitive skin) and respiratory or lung disorders (e.g., asthma, bronchitis).

**Carcinogens:** IARC has determined that crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC group 1). The National Toxicology Program (NTP) considers crystalline silica of a respirable size as a known human carcinogen.

# MORTAR / MASONRY CEMENT & SAND

6 OF 6

## **SECTION 12: Ecological Information**

Ecotoxicity: NDA

Environmental Fate: NDA

## **SECTION 13: Disposal Considerations**

This material (as packaged) may be considered a hazardous waste. Be aware that the waste owner has responsibility of final disposal. Regulations may also apply to empty containers, liners or rinsate. Laws may be changed or be reinterpreted; state and local regulations may be different from federal regulations. This information applies to materials as manufactured; contamination or processing may change waste characteristics and requirements.

## **SECTION 14: Transport Information**

DOT Hazard Description: ND

## **SECTION 15: Regulatory Information**

**Chemical Inventories:** All components of this product listed in Section 2 are included on the TSCA inventory list, the DSL/NDSL and the EINECS

**Reportable Quantities (RQ):** None

**SARA TITLE III (Superfund Amendments and Reauthorization Act):**

**Section 302 Extremely Hazardous Materials:** None

**Section 304 Notification of Accidental Release:** None

**Sections 311/312 Hazard Categories:**

<b>Immediate (Acute) Health Effects:</b>	YES
<b>Delayed (Chronic) Health Effects:</b>	YES
<b>Fire Hazard:</b>	NO
<b>Sudden Release of Pressure Hazard:</b>	NO
<b>Reactivity Hazard:</b>	NO

Section 313 Toxic Chemical Release Reporting: Not listed

**STATE REGULATORY INFORMATION:** Since each state has the authority to promulgate standards more stringent than the federal government, this section cannot provide an inclusive list of all state regulations that apply to this product. Questions related to state regulations should be directed toward local officials.

## **SECTION 16: Other Information**

For additional information, refer to the 2000 Emergency Response Guidebook and the ACGIH Documentation of the Threshold Limit Values.

**This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of SPEC MIX®. The data on this sheet relates only to the specific material designated herein. SPEC MIX® assumes no legal responsibility for use or reliance upon this data.**

# Material Safety Data Sheet

## DUCTILE IRON (TYLER PIPE)

Date Printed: 12/15/00

MSDS Date: 07/15/99

### Section 1: Product and Company Identification

Product Name: DUCTILE IRON (TYLER PIPE)

Synonyms:

Chemical Name:

Chemical Family:

Chemical Formula:

Manufacturer: TYLER PIPE COMPANY

Phone Number: (903) 882-2226

Division:

Fax: (903) 882-2222

Address: P.O. Box 2027 Tyler TX 75710-2027

Prepared By:

Product Use:

Section 1 Notes:

### Section 2: Composition/Information on Ingredients

\*\*See Section 11.

CAS #:

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV:

ACGIH STEL:

ACGIH CEILING:

#### Carbon

CAS: 1333-86-4

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV: 3.5 mg/m3

ACGIH STEL:

ACGIH CEILING:

#### Chromium

CAS: 7440-47-3

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV: 0.5 NA

ACGIH STEL:

ACGIH CEILING:

#### Iron

CAS: 000

SARA 313 Reportable: No

OSHA PEL: 10

OSHA STEL:

OSHA CEILING:

ACGIH TLV:

ACGIH STEL:

ACGIH CEILING:

#### Manganese

CAS: #07439-96-5

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV: 1 mg/m3

ACGIH STEL:

ACGIH CEILING:

#### Molybdenum

CAS: 7439-98-7

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV:

ACGIH STEL:

ACGIH CEILING:

#### Nickel

CAS: #07440-02-0

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV: 1 mg/m3

ACGIH STEL:

ACGIH CEILING:

#### Phosphorus

CAS: 7723-14-0

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV: 0.1 Phosp

ACGIH STEL:

ACGIH CEILING:

#### Silicon

CAS: 7440-21-3-

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV:

ACGIH STEL:

ACGIH CEILING:

#### Sulfur

CAS: 7404-34-9

SARA 313 Reportable: No

OSHA PEL:

OSHA STEL:

OSHA CEILING:

ACGIH TLV: NA NA

ACGIH STEL:

ACGIH CEILING:

# Material Safety Data Sheet

## DUCTILE IRON (TYLER PIPE)

Date Printed: 12/15/00

MSDS Date: 07/15/99

### Section 3: Hazards Identification

Emergency Overview:

Routes of Entry:

Potential Health Effects

Eyes: METAL PARTICLES IN EYES MAY CAUSE IRRITATION IF NOT REMOVED

Skin:

Ingestion:

Inhalation:

Chronic Health Hazards:

Conditions Aggravated by Exposure:

Carcinogenicity OSHA: No ACGIH: No NTP: No IARC: No Other:

Section 3 Notes:

### Section 4: First Aid Measures

Eyes: FLUSH WITH LARGE AMOUNTS OF WATER

Skin: IF DUST OR MIST GETS ON THE SKIN, WASH THE CONTAMINATED SKIN WITH SOAP AND WATER.  
REMOVE CLOTHING AND LAUNDER BEFORE USING AGAIN.

Ingestion:

Inhalation:

Notes to First Aid Providers:

Section 4 Notes:

### Section 5: Fire-Fighting Measures

Flammable Limits in Air: Upper: Lower: Method Used:

Flash Point: F C

Auto-ignition Temperature: F C

NFPA Hazard Classification Health: Flammability: Reactivity: Other:

HMIS Hazard Classification Health: Flammability: Reactivity: Other:

Extinguishing Media:

Special Fire-Fighting Procedures:

Unusual Fire and Explosion Hazards:

Hazardous Decomposition Products:

Section 5 Notes:

### Section 6: Accidental Release Measures

Accidental Release Measures: Material in solid form.

### Section 7: Handling and Storage

Handling and Storage:

### Section 8: Exposure Control/Personal Protection

Engineering Controls:

Ventilation: Local Exhaust: X

Respiratory Protection:

Eye Protection: Welding or Grinding.

Skin Protection: Optional.

Other Protective Clothing or Equipment:

Work Hygienic Practices:

Exposure Guidelines:

Section 8 Notes:

# Material Safety Data Sheet

## DUCTILE IRON (TYLER PIPE)

Date Printed: 12/15/00

MSDS Date: 07/15/99

### Section 9: Physical and Chemical Properties

Appearance:

Physical State:

Odor:

Vapor Pressure (mmHg): @ F C

Vapor Density (Air=1): @ F C

Specific Gravity (H2O=1):

Evaporation Rate:

Basis:

Percent Solids by Weight: Percent Volatile by Weight:

Volatile Organic Compounds (VOC):

Section 9 Notes:

pH as Supplied:

pH at Dilution

Boiling Point: F C

Melting Point: F C

Freezing Point: F C

Viscosity: @ F C

Molecular Weight:

Solubility in Water:

by Volume: @ F C

### Section 10: Stability and Reactivity

Stable: 1 Hazardous Polymerization 2

Conditions to Avoid:

Hazardous Polymerization:

Incompatibilities:

Hazardous Decomposition:

Section 10 Notes:

### Section 11: Toxicological Information

Toxicological Information: Ingredients:

Iron: >91%	10mg/m3 OSHA PEL:	5mg/m3 ACGIH-TLV
Manganese: <0.6%	6mg/m3 OSHA PEL:	6mg/m3 ACGIH-TLV
Nickel: <0.1%	1mg/m3 OSHA PEL:	1mg/m3 ACGIH-TLV
Chromium: <0.2%	1mg/m3 OSHA PEL:	0.5mg/m3 ACGIH-TLV
Carbon: <4%	15mg/m3 OSHA PEL:	10mg/m3 ACGIH-TLV
Phosphorus: <0	0.1mg/m3 OSHA PEL:	0.1mg/m3 ACGIH-TLV
Sulfur: <0.1%	5 PPM OSHA PEL:	2 PPM ACGIH-TLV
Silicon: <3%	15mg/m3 OSHA PEL:	10mg/m3 ACGIH-TLV
Molybdenum: <0.1	15mg/m3 OSHA PEL:	10mg/m3 ACGIH-TLV

### Section 12: Ecological Information

Ecological Information:

### Section 13: Disposal Considerations

Waste Disposal Method: Dispose of in accordance with appropriate Federal, State and Local Regulations.

RCRA Hazard Class:

Section 13 Notes:

**Material Safety Data Sheet**  
**DUCTILE IRON (TYLER PIPE)**

Date Printed: 12/15/00  
MSDS Date: 07/15/99

**Section 14: Transport Information**

Proper Shipping Name:

Shipping Instructions:

Shipping Hazards:

Labels:

Other Agencies:

Section 14 Notes:

UN/NA Type:

UN/NA Number:

U.S. D.O.T. ID Number:

Packing Group:

**Section 15: Regulatory Information**

T.S.C.A.

C.E.R.C.L.A.

U.S. Federal:

State:

International:

SARA 311/312

Fire: No

Pressure: No

Reactivity: No

Delayed: No

Immediate: No

Section 15 Notes:

**Section 16: Other Information**

Preparation Information:

Label Statement:

Disclaimer:

Section 16 Notes:

**MATERIAL SAFETY DATA SHEET**

**SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**Product Name: TY-SEAL PIPE LUBRICANT**

**TYLER PIPE INDUSTRIES**

P.O. Box 2027  
Tyler, TX 75710

**Emergency Phone #:** 903-882-5511 **Information Phone #:** 903-882-5511

**SECTION II: HAZARDOUS INGREDIENT INFORMATION**

<u>Chemical Name</u>	<u>C.A.S. #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Contains no hazardous ingredients			

**SECTION III: HAZARDS IDENTIFICATION**

**Emergency Overview:** Non-toxic, basically non-hazardous.  
**Eye Contact:** May cause mild irritation.  
**Skin Contact:** May cause mild irritation to persons sensitive to soap products.  
**Inhalation:** Non-hazardous by inhalation.  
**Ingestion:** Unlikely to occur.

**SECTION IV: FIRST AID MEASURES**

**Note to Physician:** Treat as soap irritation  
**Eyes:** Flush with water for 15 minutes, if irritation persists get medical aid.  
**Skin:** Wash with soap and water, if irritation persists get medical aid.  
**Inhalation:** Non-hazardous by inhalation.  
**Ingestion:** Seek immediate medical help.

**SECTION V: FIREFIGHTING MEASURES**

**Flash Point:** None  
**Flammable Limits:** N/A  
**Extinguishing Limits:** N/A  
**Firefighting Procedures:** N/A

**SECTION VI: ACCIDENTAL RELEASE MEASURES**

**Directions:** Pick up with absorbent material and place in appropriate container for disposal. Material is non-hazardous waste

**SECTION VII: HANDLING AND STORAGE**

**Storage Temperature:** Ambient.  
**Handling:** No special handling or storage procedures required.

**SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Respiratory Protection:** None required.  
**Engineering Controls:** None required.  
**Protective Clothing:** None required.  
**Gloves:** Recommended to prevent possible dermal irritation.  
**Safety Glasses:** Recommended to prevent possible eye irritation.

**SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES**

**Boiling Point:** N/A                      **Vapor Density:** N/A  
**Melting Point:** N/A                      **Specific Gravity:** 1.06  
**Flash Point:** N/A                        **Water Solubility:** Appreciable  
**Vapor Pressure:** N/A                      **Physical Form:** Paste.

**SECTION X: STABILITY AND REACTIVITY**

**Stability:** Stable  
**Hazardous Polymerization:** Will not occur.  
**Conditions to Avoid:** None known.  
**Materials to Avoid:** None.  
**Hazardous Decomposition or By-Products:** None known.

**SECTION XI: TOXICOLOGICAL INFORMATION**

Product is non-toxic.

**SECTION XII: ECOLOGICAL DATA**

No data available at this time.

**SECTION XIII: DISPOSAL CONSIDERATION**

In accordance with federal, state, and local regulations.

**SECTION XIV: TRANSPORTATION INFORMATION**

DOT Regulated: Not regulated.  
DOT Shipping Name: N/A

**SECTION XV: REGULATORY INFORMATION**

**OSHA Status:** Contains no "hazardous chemicals" as defined by OSHA Hazard Communication Standard, 29CFR, 1910.1200.  
**TSCA Status:** All ingredients listed  
**CERCLA:** Not reportable.  
**SARA Title III :** No reportable ingredients.  
**Sections 302, 311, 312, 313:** No reportable ingredients  
**RCRA Status:** Not regulated

**SECTION XVI: OTHER INFORMATION**

HMIS		0= Minimal
Health	0	1= Slight
Fire	0	2= Moderate
Reactivity	0	3= Serious
PP	0	4= severe

The above information and recommendations are believed to be accurate and reliable. However, no warranties, either expressed or implied with respect to the product or information herein are made. Users must make their own determination as to the suitability of the product for their purposes prior to use.

**01/2005**



A Bayer  Company

Sybron Chemicals Inc.  
Bayer Corporation  
200 Birmingham Road  
Birmingham, NJ 08011

TRANSPORTATION EMERGENCY

CALL CHEMTREC: 800-424-9300  
INTERNATIONAL: 703-527-3887

NON-TRANSPORTATION

BAYER EMERGENCY PHONE...: (609) 893-1100  
BAYER INFORMATION PHONE.: (609) 893-1100

1. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME.....: CC-8  
PRODUCT CODE.....: 4238  
CHEMICAL FAMILY.....: Cation Exchange Resin  
CHEMICAL NAME.....: Styrene-divinylbenzene-copolymer with sulfonic acid  
anchor groups in sodium form

2. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
--------------------------------	-----------------	-------------------

\*\*\*\*\* HAZARDOUS INGREDIENTS \*\*\*\*\*

This product contains no hazardous ingredients as defined under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION:

\*\*\*\*\*  
\* EMERGENCY OVERVIEW \*  
\* \*  
\* Color: Beige to grey; Form: Beads; Opaque; Odor: Odorless; \*  
\* Product poses little or no hazard if spilled and no unusual \*  
\* hazard if involved in a fire. \*  
\*\*\*\*\*

POTENTIAL HEALTH EFFECTS:

ROUTE(S) OF ENTRY.....: Eye and skin contact.

Product Code: 4238  
Approval date: 03/30/2004

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Continued on next page

3. HAZARDS IDENTIFICATION (Continued)

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE EFFECTS OF EXPOSURE.....: Based on animal toxicity testing on similar products (see Section 11) this product is expected to be non-irritating to the eyes and skin and practically non-toxic by ingestion.

CHRONIC EFFECTS OF EXPOSURE...: No applicable information was found concerning any adverse chronic health effects from overexposure to this product.

CARCINOGENICITY.....: This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE.....: None Known

4. FIRST AID MEASURES:

FIRST AID FOR EYES.....: In case of contact, immediately flush eyes with water occasionally lifting upper and lower lids until no evidence of chemical remains (usually 15-20 minutes).

FIRST AID FOR SKIN.....: Remove product from clothing. Wash affected skin area with soap and water. Wash clothing before reuse. Seek medical attention if irritation develops.

FIRST AID FOR INHALATION: Exposure by inhalation is not expected under normal conditions of use due to the physical nature of this material.

FIRST AID FOR INGESTION.: If swallowed, call a physician.

5. FIRE FIGHTING MEASURES:

FLASH POINT.....: Not Established

AUTO-IGNITION TEMPERATURE.....: Greater than 482 F (250 C) DIN 51794

EXTINGUISHING MEDIA.....: Water; Dry Chemical; Carbon Dioxide; Foam

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

6. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES.....: Utilize protective clothing and equipment. Spills should be swept up and placed in containers. Spill area can be washed with water. Collect wash water for approved disposal.

-----  
7. HANDLING AND STORAGE:  
-----

STORAGE TEMPERATURE(MIN/MAX): 32 F (0 C)/104 F (40 C)  
SHELF LIFE.....: Minimum five (5) years if stored in sealed original container.  
SPECIAL SENSITIVITY.....: Avoid loss of moisture (water) used to swell the beads.  
HANDLING/STORAGE PRECAUTIONS: Store in dry place, away from excessive heat, in original or similar waterproof containers. Reseal containers immediately after use. Avoid unnecessary contact. Protect from freezing.

-----  
8. PERSONAL PROTECTION:  
-----

EYE PROTECTION REQUIREMENTS.....: Protective goggles.  
SKIN PROTECTION REQUIREMENTS.....: Cloth gloves, long sleeved shirts and pants. Employees should wash their hands and face before eating, drinking or using tobacco products.  
VENTILATION REQUIREMENTS.....: Under normal conditions of use, special ventilation is not required.  
RESPIRATOR REQUIREMENTS.....: Under normal conditions of use, respiratory protection is not required.  
ADDITIONAL PROTECTIVE MEASURES.....: Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product.

-----  
9. PHYSICAL AND CHEMICAL PROPERTIES:  
-----

PHYSICAL FORM.....: Beads  
APPEARANCE.....: Opaque  
COLOR.....: Beige to grey  
ODOR.....: Odorless  
pH .....: Neutral Salt  
BOILING POINT.....: Not Established  
MELTING/FREEZING POINT.....: Not Established  
SOLUBILITY IN WATER .....: Not Applicable  
SPECIFIC GRAVITY .....: Approx. 1.27  
BULK DENSITY.....: 720 to 820 kg/m<sup>3</sup>  
VAPOR PRESSURE .....: Not Applicable

-----  
10. STABILITY AND REACTIVITY:  
-----

STABILITY.....: This is a stable material.  
HAZARDOUS POLYMERIZATION...: Will not occur.  
INCOMPATIBILITIES.....: Oxidizing and reducing agents.  
INSTABILITY CONDITIONS.....: None known.  
DECOMPOSITION TEMPERATURE...: Not Established  
DECOMPOSITION PRODUCTS.....: CO, CO2, oxides of sulfur, and other potentially  
toxic fumes.

-----  
11. TOXICOLOGICAL INFORMATION:  
-----

ACUTE TOXICITY

ORAL LD50.....: Greater than 5000 mg/kg (Rat). The dosage of 5000  
mg/kg caused no symptoms.\*  
EYE EFFECTS.....: Non-irritating to rabbit eyes.\*  
SKIN EFFECTS.....: Non-irritating to rabbit skin. (4 hr. exposure)\*

\* Based on similar products.

-----  
12. ECOLOGICAL INFORMATION:  
-----

NO ECOLOGICAL INFORMATION AVAILABLE

-----  
13. DISPOSAL CONSIDERATIONS  
-----

WASTE DISPOSAL METHOD.....: Waste disposal should be in accordance with  
existing federal, state and local environmental regulations.

-----  
14. TRANSPORTATION INFORMATION:  
-----

TECHNICAL SHIPPING NAME.....: Cation Exchange Resin  
FREIGHT CLASS BULK.....: Compounds, water purifying, not med, noi  
FREIGHT CLASS PACKAGE.....: Compounds, water purifying, not med, noi  
PRODUCT LABEL.....: Lewatit MonoPlus SP 112

14. TRANSPORTATION INFORMATION (Continued)

DOT (DOMESTIC SURFACE)

HAZARD CLASS OR DIVISION .....: Non-Regulated

IMO / IMDG CODE (OCEAN)

HAZARD CLASS DIVISION NUMBER...: Non-Regulated

ICAO / IATA (AIR)

HAZARD CLASS DIVISION NUMBER...: Non-Regulated

15. REGULATORY INFORMATION:

OSHA STATUS.....: This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS.....: On TSCA Inventory

CERCLA REPORTABLE QUANTITY...: None

SARA TITLE III:

SECTION 302 EXTREMELY

HAZARDOUS SUBSTANCES...: None

SECTION 311/312

HAZARD CATEGORIES.....: Non-hazardous under Section 311/312

SECTION 313

TOXIC CHEMICALS.....: None

RCRA STATUS.....: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT NAME

/CAS NUMBER

CONCENTRATION

STATE CODE

Benzene, diethenyl, polymer with ethenylbenzene, sulfonated, sodium salts  
68441-33-8                      50-60 %                      PA3, NJ4

Product Code: 4238  
Approval date: 03/30/2004

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Continued on next page

15. REGULATORY INFORMATION (Continued)

COMPONENT NAME /CAS NUMBER	CONCENTRATION	STATE CODE
Water 7732-18-5	40 - 50 %	PA3, NJ4

NJ4 = New Jersey Other - included in 5 predominant ingredients > 1%  
 PA3 = Pennsylvania Non-hazardous present at 3% or greater.

16. OTHER INFORMATION:

HMIS RATINGS:                   Health   Flammability   Reactivity  
                                   0           1                   1  
                                   0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

Bayer's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS ratings are provided by Bayer as a customer service.

REASON FOR ISSUE.....: New Product  
 PREPARED BY.....: S. Van Volkenburg  
 APPROVED BY.....: John F. McPeak  
 APPROVAL DATE.....: 03/30/2004  
 SUPERSEDES DATE.....: None  
 MSDS NUMBER.....: 49489

-----  
 This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Bayer. The data on this sheet relates only to the specific material designated herein. Bayer assumes no legal responsibility for use or reliance upon these data.  
 -----

Product Code: 4238  
 Approval date: 03/30/2004

MSDS Page 6  
 Last page

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

<u>Product</u>	<u>MSDS</u>	<u>Distributor</u>	<u>Format</u>	<u>Language</u>	<u>Quantity</u>
183701	21132	Hach Company	OSHA	English	1
183701	42432	Hach Company	OSHA	English	1
183701	42532	Hach Company	OSHA	English	1
183701	42632	Hach Company	OSHA	English	1
183701	92799	Hach Company	OSHA	English	1

---

Total Enclosures: 5

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00349

# MATERIAL SAFETY DATA SHEET

---

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Phenol Red Indicator Solution  
**Catalog Number:** 21132

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00349  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** Practically non-toxic.  
**Date of MSDS Preparation:**  
**Day:** 07  
**Month:** May  
**Year:** 2007

---

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Propylene Glycol

**CAS No.:** 57-55-6  
**TSCA CAS Number:** 57-55-6  
**Percent Range:** 30.0 - 40.0  
**Percent Range Units:** volume / volume  
**LD50:** Oral rat LD50 = 20 g/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Demineralized Water

**CAS No.:** 7732-18-5  
**TSCA CAS Number:** 7732-18-5  
**Percent Range:** 55.0 - 65.0  
**Percent Range Units:** volume / volume  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Other components, each

**CAS No.:** Not applicable  
**TSCA CAS Number:** Not applicable



**Percent Range:** < 1.0

**Percent Range Units:** weight / volume

**LD50:** Not applicable

**LC50:** Not applicable

**TLV:** Not established

**PEL:** Not established

**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

---

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, red liquid

**Odor:** None

**HMIS:**

**Health:** 1

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 1

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** May cause irritation

**Skin Contact:** No effects are anticipated

**Skin Absorption:** No effects anticipated

**Target Organs:** Not applicable

**Ingestion:** Practically non-toxic Very large doses may cause: central nervous system depression kidney damage rapid pulse and respirations convulsions

**Target Organs:** Not applicable

**Inhalation:** No effects anticipated

**Target Organs:** Not applicable

**Medical Conditions Aggravated:** None reported

**Chronic Effects:** None reported

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** None reported

**Toxicologically Synergistic Products:** None reported

---

### 4. FIRST AID

**Eye Contact:** Flush eyes with water. Call physician if irritation develops.

**Skin Contact (First Aid):** Wash skin with soap and plenty of water.

**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.

**Inhalation:** None required.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not determined

**Hazardous Combustion Products:** Toxic fumes of: carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** None reported

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Water. Carbon dioxide Dry chemical.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Absorb spilled liquid with non-reactive sorbent material. Sweep up material. Place material in a plastic bag. Mark bag 'Non-hazardous trash', and dispose of as normal refuse. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** None

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use.

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes Wash thoroughly after handling.

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, red liquid  
**Physical State:** Liquid  
**Molecular Weight:** Not applicable  
**Odor:** None  
**pH:** Not determined  
**Vapor Pressure:** Not determined  
**Vapor Density (air = 1):** Not determined  
**Boiling Point:** 140° C  
**Melting Point:** Not determined  
**Specific Gravity (water = 1):** Not determined  
**Evaporation Rate (water = 1):** Not determined  
**Volatile Organic Compounds Content:** Not applicable  
**Partition Coefficient (n-octanol / water):** Not applicable  
**Solubility:**  
    **Water:** Soluble  
    **Acid:** Not determined  
    **Other:** Not determined  
**Metal Corrosivity:**  
    **Steel:** Not determined  
    **Aluminum:** Not determined

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Heat Evaporation  
**Reactivity / Incompatibility:** None reported  
**Hazardous Decomposition:** Toxic fumes of: carbon dioxide carbon monoxide  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
    **LD50:** None reported  
    **LC50:** None reported  
**Dermal Toxicity Data:** None reported  
**Skin and Eye Irritation Data:** None reported  
**Mutation Data:** Propylene Glycol: Cytogenetic analysis, DNA inhibition mouse - subcutaneous - 8000 mg/kg  
**Reproductive Effects Data:** None reported  
**Ingredient Toxicological Data:** Propylene Glycol: Oral rat LD50 = 20 g/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** No information available for this product.  
**Ingredient Ecological Information:** None reported

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** NA

**ICAO Packing Group:** NA

### **I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** NA

**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None  
**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable  
**Trade Secret Registry:** Not applicable  
**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).  
**TSCA CAS Number:** Not applicable

---

## 16. OTHER INFORMATION

**Intended Use:** Indicator for pH

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Technical Judgment. In-house information. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991.

**Revision Summary:** Updates in Section(s) 14,

---

### Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00305

## MATERIAL SAFETY DATA SHEET

---

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Buffer Solution Hardness 1 pH 10.1 ± 0.1

**Catalog Number:** 42432

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00305

**Chemical Name:** Not applicable

**CAS No.:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

**Hazard:** Causes eye burns. May cause irritation.

**Date of MSDS Preparation:**

**Day:** 18

**Month:** May

**Year:** 2009

---

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Acetic Acid

**CAS No.:** 64-19-7

**TSCA CAS Number:** 64-19-7

**Percent Range:** 1.0 - 10.0

**Percent Range Units:** volume / volume

**LD50:** Oral rat LD50 = 3310 mg/kg

**LC50:** Human TClO = 816 ppm / 3 minutes (Irritant) ; Mouse LC50 = 5620 ppm / 1 hour

**TLV:** 10 ppm (15 ppm STEL)

**PEL:** 10 ppm

**Hazard:** Flammable. Causes severe burns.

#### Demineralized Water

**CAS No.:** 7732-18-5

**TSCA CAS Number:** 7732-18-5

**Percent Range:** 35.0 - 45.0

**Percent Range Units:** volume / volume

**LD50:** None reported

**LC50:** None reported

**TLV:** Not established

**PEL:** Not established

**Hazard:** No effects anticipated.

#### Other component

**CAS No.:** Not applicable

**TSCA CAS Number:** Not applicable

**Percent Range:** < 1.0

**Percent Range Units:** volume / volume

**LD50:** Not applicable

**LC50:** Not applicable

**TLV:** Not established

**PEL:** Not established

**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

**Aminomethylpropanol**

**CAS No.:** 124-68-5

**TSCA CAS Number:** 124-68-5

**Percent Range:** 50.0 - 60.0

**Percent Range Units:** volume / volume

**LD50:** Oral rat LD50 = 2900 mg/kg

**LC50:** None reported

**TLV:** Not established

**PEL:** Not established

**Hazard:** Causes burns. Combustible.

---

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, yellow liquid

**Odor:** Vinegar

CAUSES EYE BURNS HARMFUL IF ABSORBED THROUGH SKIN MAY CAUSE RESPIRATORY TRACT IRRITATION

**HMIS:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 2

**Flammability:** 1

**Reactivity:** 0

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** Causes eye burns.

**Skin Contact:** Causes mild irritation

**Skin Absorption:** Will be absorbed through the skin.

**Target Organs:** None reported

**Ingestion:** May cause: abdominal pain

**Target Organs:** None reported

**Inhalation:** May cause: respiratory tract irritation

**Target Organs:** None reported

**Medical Conditions Aggravated:** Pre-existing: Eye conditions Skin conditions Respiratory conditions

**Chronic Effects:** None reported

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen.

**Toxicologically Synergistic Products:** None reported

---

### 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with plenty of water. Call physician if irritation develops.

**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.

**Inhalation:** Remove to fresh air.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.

**Flash Point:** >97.2°C (>207°F)

**Method:** Closed cup

**Flammability Limits:**

**Lower Explosion Limits:** Not determined

**Upper Explosion Limits:** Not determined

**Autoignition Temperature:** Not determined

**Hazardous Combustion Products:** Toxic fumes of: nitrogen oxides, carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** May react violently with: strong oxidizers

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Water. Dry chemical. Carbon dioxide. Alcohol foam.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Absorb spilled liquid with non-reactive sorbent material. Dike large spills to keep spilled material from entering sewage and drainage systems or bodies of water.

**Clean-up Technique:** Cover spilled material with a dry acid, such as citric or boric. Scoop up slurry into a large beaker. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a weak acid solution.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Mixture contains a component which is regulated as a water pollutant.

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** None

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin clothing Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Store away from: oxidizers Protect from: heat

**Flammability Class:** Class IIIB

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** chemical splash goggles

**Skin Protection:** lab coat disposable latex gloves

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Keep away from: oxidizers

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, yellow liquid



**Physical State:** Liquid  
**Molecular Weight:** Not applicable  
**Odor:** Vinegar  
**pH:** of 2% solution = 10.0  
**Vapor Pressure:** Not determined  
**Vapor Density (air = 1):** Not determined  
**Boiling Point:** 104.5°C (220°F)  
**Melting Point:** Not determined  
**Specific Gravity (water = 1):** 1.033  
**Evaporation Rate (water = 1):** 0.36  
**Volatile Organic Compounds Content:** Not determined  
**Partition Coefficient (n-octanol / water):** Not determined  
**Solubility:**  
    **Water:** Soluble  
    **Acid:** Soluble  
    **Other:** Not determined  
**Metal Corrosivity:**  
    **Steel:** 0.002 in/yr  
    **Aluminum:** Not determined

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Extreme temperatures  
**Reactivity / Incompatibility:** May react violently in contact with: oxidizers  
**Hazardous Decomposition:** Toxic fumes of: nitrogen oxides carbon dioxide carbon monoxide  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
    **LD50:** None reported  
    **LC50:** None reported  
**Dermal Toxicity Data:** None reported  
**Skin and Eye Irritation Data:** Aminomethylpropanol: Skin at 1 hour exposure: erythema score of 1 @ 1hour, edema score of 0.67 @ 1hour - MILD; Skin at 4 hours exposure: erythema score of 1.33 @ 1 hour, edema score of 1.67 @ 1 hour - MILD  
**Mutation Data:** Acetic Acid: Human sister chromatid exchange in Lymphocytes at 5 mmol/l  
**Reproductive Effects Data:** None reported  
**Ingredient Toxicological Data:** Aminomethylpropanol: Oral rat LD50 = 2900 mg/kg; Acetic Acid: Oral rat LD50 = 3310 mg/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --  
No ecological data available for this product.  
**Ingredient Ecological Information:** --  
No ecological data available for the ingredients of this product.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None  
**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.  
**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.  
**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** NA

**ICAO Packing Group:** NA

### **I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** NA

**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Acetic acid 5000 lbs.

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Acetic acid - RQ 5000 lbs.

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** Not applicable

**California Perchlorate Rule CCR Title 22 Chap 33:**

**Trade Secret Registry:** Not applicable

### **National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

---

## 16. OTHER INFORMATION

**Intended Use:** Hardness determination

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. In-house information. List of Dangerous Substances Classified in Annex I of the EEC

Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**Revision Summary:** Updates in Section(s) 14,

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**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00635

# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** ManVer ® Hardness Indicator  
**Catalog Number:** 42532

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00635  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** Causes irritation. Flammable. May cause allergic reaction.  
**Date of MSDS Preparation:**  
**Day:** 21  
**Month:** January  
**Year:** 2009

---

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Propylene Glycol

**CAS No.:** 57-55-6  
**TSCA CAS Number:** 57-55-6  
**Percent Range:** 90.0 - 100.0  
**Percent Range Units:** volume / volume  
**LD50:** Oral rat LD50 = 20 g/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Hydroxylamine Hydrochloride

**CAS No.:** 5470-11-1  
**TSCA CAS Number:** 5470-11-1  
**Percent Range:** 1.0 - 10.0  
**Percent Range Units:** weight / volume  
**LD50:** Oral mouse LD50 = 408 mg/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Toxic. Causes irritation. May cause allergic reaction.

### Isopropanol

**CAS No.:** 67-63-0  
**TSCA CAS Number:** 67-63-0  
**Percent Range:** < 5.0  
**Percent Range Units:** volume / volume  
**LD50:** Oral rat LD50 = 5045 mg/kg Oral Human LDLo = 2770 mg/kg  
**LC50:** Inhalation rat LCLo = 12000 ppm/8hr  
**TLV:** 400 ppm (500 ppm STEL)

*PEL:* 400 ppm

*Hazard:* Flammable. Causes moderate eye irritation.

### **Calmagite**

*CAS No.:* 3147-14-6

*TSCA CAS Number:* 3147-14-6

*Percent Range:* < 1.0

*Percent Range Units:* weight / volume

*LD50:* Oral rat LD50 > 5000 mg/kg

*LC50:* None reported

*TLV:* Not established

*PEL:* Not established

*Hazard:* May cause irritation.

---

## **3. HAZARDS IDENTIFICATION**

### *Emergency Overview:*

*Appearance:* Dark red liquid

*Odor:* Fruity

HARMFUL IF SWALLOWED CAUSES EYE IRRITATION MAY CAUSE SKIN IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

FLAMMABLE

### *HMIS:*

*Health:* 2

*Flammability:* 3

*Reactivity:* 0

*Protective Equipment:* X - See protective equipment, Section 8.

### *NFPA:*

*Health:* 2

*Flammability:* 3

*Reactivity:* 0

*Symbol:* Not applicable

### *Potential Health Effects:*

*Eye Contact:* Causes irritation

*Skin Contact:* May cause irritation May cause allergic reaction

*Skin Absorption:* Will be absorbed through the skin. Effects similar to those of ingestion

*Target Organs:* Central nervous system Red blood cells

*Ingestion:* Very large doses may cause: central nervous system depression drowsiness dizziness incoordination headache abdominal cramps rapid pulse and respirations convulsions Hydroxylamine Hydrochloride causes a decreased supply of oxygen to the tissues, blue discoloration of the skin, convulsions, drop in blood pressure and coma.

*Target Organs:* Central nervous system Red blood cells

*Inhalation:* May cause: irritation of nose and throat

*Target Organs:* None reported

*Medical Conditions Aggravated:* Pre-existing: Eye conditions Skin conditions Respiratory conditions

*Chronic Effects:* Chronic overexposure may cause damage to red blood cells

### *Cancer / Reproductive Toxicity Information:*

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

*Additional Cancer / Reproductive Toxicity Information:* Contains: an experimental mutagen. an experimental teratogen.

*Toxicologically Synergistic Products:* None reported

---

## **4. FIRST AID**

*Eye Contact:* Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with soap and plenty of water. Call physician if irritation develops.  
**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.  
**Inhalation:** Remove to fresh air.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Combustion generates toxic fumes.  
**Flash Point:** 25.7°C (78.3°F)  
**Method:** Closed cup  
**Flammability Limits:**  
**Lower Explosion Limits:** Not determined  
**Upper Explosion Limits:** Not determined  
**Autoignition Temperature:** Not determined  
**Hazardous Combustion Products:** Toxic fumes of: chlorides carbon monoxide, carbon dioxide.  
**Fire / Explosion Hazards:** May react violently with: strong oxidizers Do not expose to sparks or other ignition sources.  
**Static Discharge:** None reported.  
**Mechanical Impact:** None reported  
**Extinguishing Media:** Alcohol foam.  
**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**  
Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.  
**Containment Technique:** Releases of this material may contaminate the environment. Remove all combustible material from spill area. Remove all ignition and spark-creating sources from the spill area. Cover spilled liquid with a commercially available flammable liquid sorbent such as vapor barrier blanket or activated carbon to avoid evolution of fumes. Vapors may travel to a source of ignition and flash back. May be ignited by: heat, sparks, or flames. Dike the material to create a barrier to combustibles.  
**Clean-up Technique:** Eliminate all sources of ignition. Do not breathe the fumes. Use only non-sparking tools. Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Scoop up slurry into a large beaker. Dilute with a large excess of water. Filter to remove solids. Flush the spilled material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.  
**Evacuation Procedure:** Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.  
**Special Instructions (for accidental release):** Product is regulated as RCRA hazardous waste.  
**304 EHS RQ (40 CFR 355):** Not applicable  
**D.O.T. Emergency Response Guide Number:** 132

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin clothing Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.  
**Storage:** Keep away from: oxidizers Protect from: sparks, flames and other ignition sources  
**Flammability Class:** Class IC

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.  
**Personal Protective Equipment:**  
**Eye Protection:** safety glasses with top and side shields  
**Skin Protection:** disposable latex gloves lab coat  
**Inhalation Protection:** adequate ventilation  
**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Keep away from: oxidizers Protect from: sparks, flames and other ignition sources

*TLV:* Not established

*PEL:* Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Dark red liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** Fruity

**pH:** 1.09

**Vapor Pressure:** Not determined

**Vapor Density (air = 1):** Not determined

**Boiling Point:** 118°C

**Melting Point:** Not determined

**Specific Gravity (water = 1):** 1.01

**Evaporation Rate (water = 1):** 0.05

**Volatile Organic Compounds Content:** Not determined

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** 0.288 in/yr

**Aluminum:** 0.001 in/yr

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Contact with heat, sparks, open flames or other ignition sources. Heating to decomposition.

**Reactivity / Incompatibility:** Incompatible with: oxidizers

**Hazardous Decomposition:** Toxic fumes of: chlorides carbon monoxide carbon dioxide

**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** None reported

**LC50:** None reported

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** None reported

**Mutation Data:** Data reported in RTECS for Isopropanol, Propylene Glycol and Hydroxylamine Hydrochloride

**Reproductive Effects Data:** Data reported in RTECS for Isopropanol

**Ingredient Toxicological Data:** Hydroxylamine Hydrochloride: Oral mouse LD<sub>50</sub> = 400 mg/kg, Oral mouse LD<sub>50</sub> = 408 mg/kg; Propylene Glycol: Oral rat LD<sub>50</sub> = 20 g/kg; Isopropanol: Oral human LD<sub>Lo</sub> = 2770 mg/kg, Oral rat LD<sub>50</sub> = 5045 mg/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** --

No ecological data available for the ingredients of this product.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D001, D002

**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Flammable Liquid, Corrosive, N.O.S.

(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**DOT Hazard Class:** 3

**DOT Subsidiary Risk:** 8

**DOT ID Number:** UN2924

**DOT Packing Group:** III

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S.

(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**ICAO Hazard Class:** 3

**ICAO Subsidiary Risk:** 8

**ICAO ID Number:** UN2924

**ICAO Packing Group:** III

### **I.M.O.:**

**I.M.O. Proper Shipping Name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S.

(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**I.M.O. Hazard Class:** 3

**I.M.O. Subsidiary Risk:** 8

**I.M.O. ID Number:** UN2924

**I.M.O. Packing Group:** III

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard Fire Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

**C.P.S.C.:** Not applicable

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:**

**Trade Secret Registry:** Not applicable

### **National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

---



## 16. OTHER INFORMATION

**Intended Use:** Indicator for hardness

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. In-house information. Technical Judgment.

**Revision Summary:** Updates in Section(s) 2, 3, European MSDS Only

---

### Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00582

## MATERIAL SAFETY DATA SHEET

---

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Titrant Solution Hardness 3 0.015 M EDTA

**Catalog Number:** 42632

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00582

**Chemical Name:** Not applicable

**CAS No.:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

**Hazard:** No effects anticipated.

**Date of MSDS Preparation:**

**Day:** 14

**Month:** February

**Year:** 2007

---

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Propylene Glycol

**CAS No.:** 57-55-6

**TSCA CAS Number:** 57-55-6

**Percent Range:** 20.0 - 30.0

**Percent Range Units:** volume / volume

**LD50:** Oral rat LD50 = 20 g/kg

**LC50:** None reported

**TLV:** Not established

**PEL:** Not established

**Hazard:** No effects anticipated.

#### Demineralized Water

**CAS No.:** 7732-18-5

**TSCA CAS Number:** 7732-18-5

**Percent Range:** 70.0 - 80.0

**Percent Range Units:** volume / volume

**LD50:** None reported

**LC50:** None reported

**TLV:** Not established

**PEL:** Not established

**Hazard:** No effects anticipated.

#### Other components, each

**CAS No.:** Not applicable

**TSCA CAS Number:** Not applicable

**Percent Range:** < 1.0

**Percent Range Units:** weight / volume

**LD50:** Not applicable

**LC50:** Not applicable

**TLV:** Not established

**PEL:** Not established

**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

---

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, colorless liquid

**Odor:** None

**HMIS:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** No effects are anticipated

**Skin Contact:** No effects are anticipated

**Skin Absorption:** No effects anticipated

**Target Organs:** Not applicable

**Ingestion:** No Effects Anticipated

**Target Organs:** Not applicable

**Inhalation:** No effects anticipated

**Target Organs:** Not applicable

**Medical Conditions Aggravated:** None reported

**Chronic Effects:** No effects anticipated

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** None reported

**Toxicologically Synergistic Products:** None reported

---

### 4. FIRST AID

**Eye Contact:** Flush eyes with water. Call physician if irritation develops.

**Skin Contact (First Aid):** Wash skin with plenty of water.

**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.

**Inhalation:** None required.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will not burn.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Hazardous Combustion Products:** This material will not burn.

**Fire / Explosion Hazards:** This product will not burn or explode.

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Use media appropriate to surrounding fire conditions

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Absorb spilled liquid with non-reactive sorbent material. Mark bag 'Non-hazardous trash', and dispose of as normal refuse. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** None

---

## 7. HANDLING / STORAGE

**Handling:** Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use.

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** Not applicable

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Wash thoroughly after handling.

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid  
**Physical State:** Liquid  
**Molecular Weight:** Not applicable  
**Odor:** None  
**pH:** 5.0  
**Vapor Pressure:** Not determined  
**Vapor Density (air = 1):** Not determined  
**Boiling Point:** > 100° C (>212° F)  
**Melting Point:** Not determined  
**Specific Gravity (water = 1):** 1.026  
**Evaporation Rate (water = 1):** 0.63  
**Volatile Organic Compounds Content:** Not determined  
**Partition Coefficient (n-octanol / water):** Not applicable  
**Solubility:**  
    **Water:** Soluble  
    **Acid:** Soluble  
    **Other:** Not determined  
**Metal Corrosivity:**  
    **Steel:** Not determined  
    **Aluminum:** Not determined

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Not applicable  
**Reactivity / Incompatibility:** None reported  
**Hazardous Decomposition:** No hazardous decomposition products known.  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
    **LD50:** None reported  
    **LC50:** None reported  
**Dermal Toxicity Data:** None reported  
**Skin and Eye Irritation Data:** None reported  
**Mutation Data:** Propylene Glycol: Cytogenetic analysis, DNA inhibition mouse - subcutaneous - 8000 mg/kg  
**Reproductive Effects Data:** Propylene Glycol: Intraperitoneal mouse TDLo = 100 mg/kg -fetotoxicity, post implantation mortality  
**Ingredient Toxicological Data:** Propylene Glycol: Oral rat LD50 = 20 g/kg; Dermal rabbit LD50 = 20.8 g/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --  
No ecological data available for this product.  
**Ingredient Ecological Information:** --  
No ecological data available for the ingredients of this product.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** NA

**ICAO Packing Group:** NA

### **I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** NA

**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

*Identification of Prop. 65 Ingredient(s):* None  
*California Perchlorate Rule CCR Title 22 Chap 33:*  
*Trade Secret Registry:* Not applicable  
*National Inventories:*  
*U.S. Inventory Status:* TSCA Listed: Yes  
*TSCA CAS Number:* Not applicable

---

## 16. OTHER INFORMATION

*Intended Use:* Hardness determination

*References:* Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. In-house information. Vendor Information. Technical Judgment.

*Revision Summary:* Updates in Section(s) 14,

---

### Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00020

## MATERIAL SAFETY DATA SHEET

---

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** FerroVer ® Iron Reagent  
**Catalog Number:** 92799

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00020  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** Allergen May cause irritation.  
**Date of MSDS Preparation:**  
**Day:** 03  
**Month:** December  
**Year:** 2007

---

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Sodium Thiosulfate

**CAS No.:** 10102-17-7  
**TSCA CAS Number:** 7772-98-7  
**Percent Range:** 15.0 - 25.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 > 8 gm/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation.

#### 1,10-Phenanthroline-p-toluenesulfonic Acid Salt

**CAS No.:** 92798-16-8  
**TSCA CAS Number:** 92798-16-8  
**Percent Range:** 1.0 - 5.0  
**Percent Range Units:** weight / weight  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation. Toxic properties unknown.

#### Sodium Hydrosulfite

**CAS No.:** 7775-14-6



**TSCA CAS Number:** 7775-14-6  
**Percent Range:** 25.0 - 35.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 > 500 mg/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Allergen Causes moderate eye irritation. Flammable solid.

#### **Sodium Citrate**

**CAS No.:** 68-04-2  
**TSCA CAS Number:** 68-04-2  
**Percent Range:** 1.0 - 10.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 >8 g/Kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation.

#### **Sodium Metabisulfite**

**CAS No.:** 7681-57-4  
**TSCA CAS Number:** 7681-57-4  
**Percent Range:** 40.0 - 50.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD<sub>50</sub> = 1131 mg/kg  
**LC50:** None reported  
**TLV:** 5 mg/m<sup>3</sup> (ACGIH - TWA)  
**PEL:** Not established  
**Hazard:** May cause irritation. May cause allergic reaction.

---

### **3. HAZARDS IDENTIFICATION**

#### ***Emergency Overview:***

**Appearance:** White to light yellow crystals

**Odor:** Sulfur-like

MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION

MAY CAUSE ALLERGIC RESPIRATORY REACTION IF SWALLOWED OR INHALED

#### ***HMIS:***

**Health:** 2

**Flammability:** 0

**Reactivity:** 1

**Protective Equipment:** X - See protective equipment, Section 8.

#### ***NFPA:***

**Health:** 2

**Flammability:** 0

**Reactivity:** 1

**Symbol:** Not applicable

#### ***Potential Health Effects:***

**Eye Contact:** May cause irritation

**Skin Contact:** May cause irritation

**Skin Absorption:** None reported

**Target Organs:** None reported

**Ingestion:** May cause allergic respiratory reaction if swallowed or inhaled. May cause: gastrointestinal irritation diarrhea circulatory disturbances central nervous system depression Very large doses may cause: colic depression death

**Target Organs:** None reported

**Inhalation:** May cause: allergic respiratory reaction respiratory tract irritation difficult breathing sweating rapid pulse and respirations blood pressure changes coughing flushing hives

**Target Organs:** None reported

**Medical Conditions Aggravated:** Sulfites are strong sensitizers. Inhalation and ingestion may cause allergic respiratory reactions in asthmatics. Persons with respiratory conditions should take special care when working with products that contain sulfites.

**Chronic Effects:** Chronic overexposure may cause allergic respiratory reactions

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Metabisulfites

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen.

**Toxicologically Synergistic Products:** None reported

---

## 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with soap and plenty of water. Call physician if irritation develops.

**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not determined

**Hazardous Combustion Products:** Toxic fumes of: sulfur oxides. sodium oxides carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** May react violently with: strong oxidizers

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Carbon dioxide Alcohol foam. Dry chemical.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Sweep up material. Working in a large container, cautiously add small portions of the spilled material to cold water with agitation. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** Not applicable

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Store away from: oxidizers Protect from: moisture Keep container tightly closed when not in use.

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling. Protect from: oxidizers moisture

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White to light yellow crystals

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Sulfur-like

**pH:** of 5% solution = 5.3

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable

**Melting Point:** >400°C (>752°F)

**Specific Gravity (water = 1):** 2.21

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not available

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** 0.081 in/yr

**Aluminum:** 0.010 in/yr

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Heating to decomposition.

**Reactivity / Incompatibility:** May react violently in contact with: oxidizers

**Hazardous Decomposition:** Toxic fumes of: sodium oxides sulfur oxides carbon dioxide carbon monoxide

**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral rat LD50 = 1400 mg/kg

**LC50:** None reported

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** None reported

**Mutation Data:** None reported

**Reproductive Effects Data:** None reported

**Ingredient Toxicological Data:** Sodium Thiosulfate: Oral rat LD50 > 8g/kg, Sodium Hydrosulfite: Oral rat LD50 > 500 mg/kg, Sodium Citrate: Oral rat LD50 > 8 g/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** No information available for this product.

**Ingredient Ecological Information:** Sodium Metabisulfite: 120 ppm / 24, 48 & 96 hours / mosquito fish / TLm / fresh water (converting bisulfite figure to metabisulfite), Sodium Thiosulfate: 24,000 mg / l / 96 hours / mosquito fish / TLm / turbid water at 22°-24°C

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Work in an approved fume hood. Working in a large container, cautiously add small portions of the material to cold water with agitation. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA  
**ICAO Subsidiary Risk:** NA  
**ICAO ID Number:** NA  
**ICAO Packing Group:** NA

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA  
**I.M.O. Subsidiary Risk:** NA  
**I.M.O. ID Number:** NA  
**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

**U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

**E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** Not applicable

**California Perchlorate Rule CCR Title 22 Chap 33:**

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

---

## 16. OTHER INFORMATION

**Intended Use:** Indicator for iron

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. In-house information. Outside Testing. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**Revision Summary:** Updates in Section(s) 14,

**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

**HACH COMPANY ©2009**

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

<u>Product</u>	<u>MSDS</u>	<u>Distributor</u>	<u>Format</u>	<u>Language</u>	<u>Quantity</u>
145602	42632	Hach Company	OSHA	English	1
145602	92799	Hach Company	OSHA	English	1
145602	96299	Hach Company	OSHA	English	1

---

Total Enclosures: 3

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00582

# MATERIAL SAFETY DATA SHEET

---

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Titrant Solution Hardness 3 0.015 M EDTA  
**Catalog Number:** 42632

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00582  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** No effects anticipated.  
**Date of MSDS Preparation:**  
**Day:** 14  
**Month:** February  
**Year:** 2007

---

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Propylene Glycol

**CAS No.:** 57-55-6  
**TSCA CAS Number:** 57-55-6  
**Percent Range:** 20.0 - 30.0  
**Percent Range Units:** volume / volume  
**LD50:** Oral rat LD50 = 20 g/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Demineralized Water

**CAS No.:** 7732-18-5  
**TSCA CAS Number:** 7732-18-5  
**Percent Range:** 70.0 - 80.0  
**Percent Range Units:** volume / volume  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

### Other components, each

**CAS No.:** Not applicable  
**TSCA CAS Number:** Not applicable



**Percent Range:** < 1.0

**Percent Range Units:** weight / volume

**LD50:** Not applicable

**LC50:** Not applicable

**TLV:** Not established

**PEL:** Not established

**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

---

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, colorless liquid

**Odor:** None

**HMIS:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 0

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** No effects are anticipated

**Skin Contact:** No effects are anticipated

**Skin Absorption:** No effects anticipated

**Target Organs:** Not applicable

**Ingestion:** No Effects Anticipated

**Target Organs:** Not applicable

**Inhalation:** No effects anticipated

**Target Organs:** Not applicable

**Medical Conditions Aggravated:** None reported

**Chronic Effects:** No effects anticipated

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** None reported

**Toxicologically Synergistic Products:** None reported

---

### 4. FIRST AID

**Eye Contact:** Flush eyes with water. Call physician if irritation develops.

**Skin Contact (First Aid):** Wash skin with plenty of water.

**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.

**Inhalation:** None required.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will not burn.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Hazardous Combustion Products:** This material will not burn.

**Fire / Explosion Hazards:** This product will not burn or explode.

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Use media appropriate to surrounding fire conditions

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Absorb spilled liquid with non-reactive sorbent material. Mark bag 'Non-hazardous trash', and dispose of as normal refuse. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** None

---

## 7. HANDLING / STORAGE

**Handling:** Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Keep container tightly closed when not in use.

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** Not applicable

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Wash thoroughly after handling.

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid  
**Physical State:** Liquid  
**Molecular Weight:** Not applicable  
**Odor:** None  
**pH:** 5.0  
**Vapor Pressure:** Not determined  
**Vapor Density (air = 1):** Not determined  
**Boiling Point:** > 100° C (>212° F)  
**Melting Point:** Not determined  
**Specific Gravity (water = 1):** 1.026  
**Evaporation Rate (water = 1):** 0.63  
**Volatile Organic Compounds Content:** Not determined  
**Partition Coefficient (n-octanol / water):** Not applicable  
**Solubility:**  
    **Water:** Soluble  
    **Acid:** Soluble  
    **Other:** Not determined  
**Metal Corrosivity:**  
    **Steel:** Not determined  
    **Aluminum:** Not determined

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Not applicable  
**Reactivity / Incompatibility:** None reported  
**Hazardous Decomposition:** No hazardous decomposition products known.  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**  
    **LD50:** None reported  
    **LC50:** None reported  
**Dermal Toxicity Data:** None reported  
**Skin and Eye Irritation Data:** None reported  
**Mutation Data:** Propylene Glycol: Cytogenetic analysis, DNA inhibition mouse - subcutaneous - 8000 mg/kg  
**Reproductive Effects Data:** Propylene Glycol: Intraperitoneal mouse TDLo = 100 mg/kg -fetotoxicity, post implantation mortality  
**Ingredient Toxicological Data:** Propylene Glycol: Oral rat LD50 = 20 g/kg; Dermal rabbit LD50 = 20.8 g/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --  
No ecological data available for this product.  
**Ingredient Ecological Information:** --  
No ecological data available for the ingredients of this product.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** NA

**ICAO Packing Group:** NA

### **I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** NA

**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product does not meet the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** This product is not hazardous under 29 CFR.1910.1200 and therefore is not covered by Title III under SARA.

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

*Identification of Prop. 65 Ingredient(s):* None  
*California Perchlorate Rule CCR Title 22 Chap 33:*  
*Trade Secret Registry:* Not applicable  
*National Inventories:*  
*U.S. Inventory Status:* TSCA Listed: Yes  
*TSCA CAS Number:* Not applicable

---

## 16. OTHER INFORMATION

*Intended Use:* Hardness determination

*References:* Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. In-house information. Vendor Information. Technical Judgment.

*Revision Summary:* Updates in Section(s) 14,

---

### Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00020

## MATERIAL SAFETY DATA SHEET

---

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** FerroVer ® Iron Reagent  
**Catalog Number:** 92799

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00020  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** Allergen May cause irritation.  
**Date of MSDS Preparation:**  
**Day:** 03  
**Month:** December  
**Year:** 2007

---

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Sodium Thiosulfate

**CAS No.:** 10102-17-7  
**TSCA CAS Number:** 7772-98-7  
**Percent Range:** 15.0 - 25.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 > 8 gm/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation.

#### 1,10-Phenanthroline-p-toluenesulfonic Acid Salt

**CAS No.:** 92798-16-8  
**TSCA CAS Number:** 92798-16-8  
**Percent Range:** 1.0 - 5.0  
**Percent Range Units:** weight / weight  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation. Toxic properties unknown.

#### Sodium Hydrosulfite

**CAS No.:** 7775-14-6

**TSCA CAS Number:** 7775-14-6  
**Percent Range:** 25.0 - 35.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 > 500 mg/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Allergen Causes moderate eye irritation. Flammable solid.

#### **Sodium Citrate**

**CAS No.:** 68-04-2  
**TSCA CAS Number:** 68-04-2  
**Percent Range:** 1.0 - 10.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 >8 g/Kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation.

#### **Sodium Metabisulfite**

**CAS No.:** 7681-57-4  
**TSCA CAS Number:** 7681-57-4  
**Percent Range:** 40.0 - 50.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD<sub>50</sub> = 1131 mg/kg  
**LC50:** None reported  
**TLV:** 5 mg/m<sup>3</sup> (ACGIH - TWA)  
**PEL:** Not established  
**Hazard:** May cause irritation. May cause allergic reaction.

---

### **3. HAZARDS IDENTIFICATION**

#### ***Emergency Overview:***

**Appearance:** White to light yellow crystals

**Odor:** Sulfur-like

MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION

MAY CAUSE ALLERGIC RESPIRATORY REACTION IF SWALLOWED OR INHALED

#### ***HMIS:***

**Health:** 2

**Flammability:** 0

**Reactivity:** 1

**Protective Equipment:** X - See protective equipment, Section 8.

#### ***NFPA:***

**Health:** 2

**Flammability:** 0

**Reactivity:** 1

**Symbol:** Not applicable

#### ***Potential Health Effects:***

**Eye Contact:** May cause irritation

**Skin Contact:** May cause irritation

**Skin Absorption:** None reported

**Target Organs:** None reported

**Ingestion:** May cause allergic respiratory reaction if swallowed or inhaled. May cause: gastrointestinal irritation diarrhea circulatory disturbances central nervous system depression Very large doses may cause: colic depression death

**Target Organs:** None reported

**Inhalation:** May cause: allergic respiratory reaction respiratory tract irritation difficult breathing sweating rapid pulse and respirations blood pressure changes coughing flushing hives

**Target Organs:** None reported

**Medical Conditions Aggravated:** Sulfites are strong sensitizers. Inhalation and ingestion may cause allergic respiratory reactions in asthmatics. Persons with respiratory conditions should take special care when working with products that contain sulfites.

**Chronic Effects:** Chronic overexposure may cause allergic respiratory reactions

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Metabisulfites

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen.  
**Toxicologically Synergistic Products:** None reported

---

## 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with soap and plenty of water. Call physician if irritation develops.

**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not determined

**Hazardous Combustion Products:** Toxic fumes of: sulfur oxides. sodium oxides carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** May react violently with: strong oxidizers

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Carbon dioxide Alcohol foam. Dry chemical.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.



**Clean-up Technique:** Sweep up material. Working in a large container, cautiously add small portions of the spilled material to cold water with agitation. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** Not applicable

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Store away from: oxidizers Protect from: moisture Keep container tightly closed when not in use.

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling. Protect from: oxidizers moisture

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White to light yellow crystals

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Sulfur-like

**pH:** of 5% solution = 5.3

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable

**Melting Point:** >400°C (>752°F)

**Specific Gravity (water = 1):** 2.21

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not available

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** 0.081 in/yr

**Aluminum:** 0.010 in/yr

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Heating to decomposition.

**Reactivity / Incompatibility:** May react violently in contact with: oxidizers

**Hazardous Decomposition:** Toxic fumes of: sodium oxides sulfur oxides carbon dioxide carbon monoxide

**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral rat LD50 = 1400 mg/kg

**LC50:** None reported

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** None reported

**Mutation Data:** None reported

**Reproductive Effects Data:** None reported

**Ingredient Toxicological Data:** Sodium Thiosulfate: Oral rat LD50 > 8g/kg, Sodium Hydrosulfite: Oral rat LD50 > 500 mg/kg, Sodium Citrate: Oral rat LD50 > 8 g/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** No information available for this product.

**Ingredient Ecological Information:** Sodium Metabisulfite: 120 ppm / 24, 48 & 96 hours / mosquito fish / TLm / fresh water (converting bisulfite figure to metabisulfite), Sodium Thiosulfate: 24,000 mg / l / 96 hours / mosquito fish / TLm / turbid water at 22°-24°C

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Work in an approved fume hood. Working in a large container, cautiously add small portions of the material to cold water with agitation. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA  
**ICAO Subsidiary Risk:** NA  
**ICAO ID Number:** NA  
**ICAO Packing Group:** NA

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA  
**I.M.O. Subsidiary Risk:** NA  
**I.M.O. ID Number:** NA  
**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

**U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

**E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** Not applicable

**California Perchlorate Rule CCR Title 22 Chap 33:**

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

---

## 16. OTHER INFORMATION

**Intended Use:** Indicator for iron

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. In-house information. Outside Testing. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**Revision Summary:** Updates in Section(s) 14,

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**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

**HACH COMPANY ©2009**

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00168

## MATERIAL SAFETY DATA SHEET

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** UniVer ® 3 Hardness Reagent  
**Catalog Number:** 96299

Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00168  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** May cause allergic reaction. May cause irritation.  
**Date of MSDS Preparation:**  
**Day:** 28  
**Month:** September  
**Year:** 2007

---

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Sodium Carbonate

**CAS No.:** 497-19-8  
**TSCA CAS Number:** 497-19-8  
**Percent Range:** 55.0 - 65.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 4090 mg/kg  
**LC50:** Inhalation rat LC50 = 2300 mg/m<sup>3</sup>/2hr  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Causes moderate eye irritation.

#### Ethylenediaminetetraacetic Acid, Magnesium Disodium Salt

**CAS No.:** 14402-88-1  
**TSCA CAS Number:** 14402-88-1  
**Percent Range:** 1.0 - 5.0  
**Percent Range Units:** weight / weight  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation.

#### Other components, each

**CAS No.:** Not applicable

**TSCA CAS Number:** Not applicable  
**Percent Range:** < 1.0  
**Percent Range Units:** weight / weight  
**LD50:** Not applicable  
**LC50:** Not applicable  
**TLV:** Not established  
**PEL:** Not established

**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

#### **Ammonium Chloride**

**CAS No.:** 12125-02-9  
**TSCA CAS Number:** 12125-02-9  
**Percent Range:** 10.0 - 20.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD<sub>50</sub> = 1650 mg/kg  
**LC50:** None reported  
**TLV:** 10 mg/m<sup>3</sup>  
**PEL:** 10 mg/m<sup>3</sup>  
**Hazard:** Causes severe eye irritation.

#### **Sodium Sulfite**

**CAS No.:** 7757-83-7  
**TSCA CAS Number:** 7757-83-7  
**Percent Range:** 15.0 - 25.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral mouse LD<sub>50</sub> = 820 mg/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause allergic reaction. May cause irritation.

---

### **3. HAZARDS IDENTIFICATION**

#### ***Emergency Overview:***

**Appearance:** Light pink powder

**Odor:** Odorless

MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION

MAY CAUSE ALLERGIC RESPIRATORY REACTION IF SWALLOWED OR INHALED

#### ***HMIS:***

**Health:** 2

**Flammability:** 0

**Reactivity:** 0

**Protective Equipment:** X - See protective equipment, Section 8.

#### ***NFPA:***

**Health:** 2

**Flammability:** 0

**Reactivity:** 0

**Symbol:** Not applicable

#### ***Potential Health Effects:***

**Eye Contact:** May cause irritation

**Skin Contact:** May cause irritation

**Skin Absorption:** None reported

**Target Organs:** None reported

**Ingestion:** May cause: gastrointestinal irritation nausea vomiting diarrhea allergic respiratory reaction

**Target Organs:** None reported

**Inhalation:** May cause: respiratory tract irritation allergic respiratory reaction

**Target Organs:** None reported

**Medical Conditions Aggravated:** Sulfites are strong sensitizers. Inhalation and ingestion may cause allergic respiratory reactions in asthmatics. Persons with respiratory conditions should take special care when working with products that contain sulfites.

**Chronic Effects:** None reported

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any OSHA listed carcinogens.

An ingredient of this mixture is: IARC Group 3: Non-classifiable

Sulfites

This product does NOT contain any NTP listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen.

**Toxicologically Synergistic Products:** None reported

---

## 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician.

**Skin Contact (First Aid):** Wash skin with soap and plenty of water.

**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

---

## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Does not burn, but may melt in a fire, releasing toxic fumes.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Hazardous Combustion Products:** Toxic fumes of: nitrogen oxides. sulfur oxides. carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** None reported

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Use media appropriate to surrounding fire conditions

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

## 6. ACCIDENTAL RELEASE MEASURES

**Spill Response Notice:**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a weak acid solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** None

---

## 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Protect from: moisture Keep away from: acids oxidizers

**Flammability Class:** Not applicable

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** disposable latex gloves lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin clothing Protect from: moisture Keep away from: acids/acid fumes oxidizers

**TLV:** Not established

**PEL:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Light pink powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Odorless

**pH:** 1.6% solution = 10.1

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable

**Melting Point:** 95°C; 203°F

**Specific Gravity (water = 1):** 2.25

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Not determined

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** 0.000 in/yr

**Aluminum:** 0.022 in/yr

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Heat Excess moisture



**Reactivity / Incompatibility:** Incompatible with: acids oxidizers  
**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides sulfur oxides ammonia carbon monoxide carbon dioxide  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** None reported

**LC50:** None reported

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** Sodium Carbonate: Eye rabbit 100 mg/24H - MODERATE; Skin rabbit 100 mg/24H - MILD; Ammonium Chloride: Eye rabbit - 500 mg/24H - MILD; Eye rabbit 100 mg - SEVERE

**Mutation Data:** Sodium Sulfite: Cytogenetic analysis, sperm morphology - mouse cells 25 mg/l; Mutation - human lymphocytes - 100 µmol/l

**Reproductive Effects Data:** None reported

**Ingredient Toxicological Data:** Sodium Carbonate: Oral rat LD50 = 4090 mg/kg; Sodium Sulfite: Oral mouse LD50 = 820 mg/kg; Ammonium Chloride: Oral rat LD50 = 1650 mg/kg

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** Sodium Sulfite: Biological Oxygen Demand (BOD): 0.12 lb/lb; 2600 ppm/24,48 & 96 H/mosquito fish/TLm/fresh water

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Work in an approved fume hood. Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system.

**Empty Containers:** Rinse three times with an appropriate solvent. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

**I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** NA

**ICAO Packing Group:** NA

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** NA

**I.M.O. Packing Group:** NA

**Additional Information:** There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

**U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

**E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Ammonia

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Ammonium chloride: 5000 lbs.

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Ammonium chloride - RQ 5000 lbs.

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

**State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:**

**Trade Secret Registry:** Not applicable

**National Inventories:**

**U.S. Inventory Status:** All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

**TSCA CAS Number:** Not applicable

---

## 16. OTHER INFORMATION

**Intended Use:** Hardness determination

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Cassaret and Doull's Toxicology, 3rd Ed. New York: Macmillan Publishing Co., Inc., 1986. In-house information. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. Technical Judgment.

**Revision Summary:** Updates in Section(s) 14,

---

### Legend:

NA - Not Applicable

w/w - weight/weight

ND - Not Determined

w/v - weight/volume

NV - Not Available

v/v - volume/volume

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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100 Mansell Court East, Suite 300; Roswell, GA 30076  
 Telephone (770) 594-0660 Fax: (770) 645-3384  
 Customer Service: (800) 251-6327

## MATERIAL SAFETY DATA SHEET

### Section 1 - Material Identity

**Product Trade Name(s):** XO  
**Common Name(s):** Ground Limestone , Ground Calcium Carbonate  
**Chemical Formula:** CaCO<sub>3</sub>MgCO<sub>3</sub>  
**CAS Number:** 1317-65-3 (In TSCA Inventory)  
**Physical Form:** White Powder

#### HMIS Ratings

Health Hazard	1
Flammability Hazard	0
Reactivity Hazard	0
Max. Personal Protection	E

**Manufacturer's Name & Address:** IMERYS Pigments & Additives Group, 100 Mansell Court East, Suite 300;  
 Roswell, GA 30076  
**Emergency Telephone:** (800) 424-9300 CHEMTREC

### Section 2 - Ingredients and Hazards

<u>Ingredient</u>	<u>Wt. % (Approx.)</u>	<u>CAS No.</u>	<u>OSHA PEL*</u>	<u>ACGIH TLV*</u>
Ground Limestone	> 99%	1317-65-3	5 mg/m <sup>3</sup> Resp. 15 mg/m <sup>3</sup> Total	2 mg/m <sup>3</sup> Resp. --
Crystalline Silica, Quartz	0.1% - 0.75%	14808-60-7	0.1 mg/m <sup>3</sup> Resp.	0.025 mg/m <sup>3</sup> Resp.
Water	< 1%			

\* Unless otherwise noted, all PEL and TLV values are reported as 8 hour time weighted averages (TWA).

### Section 3 - Hazards Identification and Cautions

**Appearance:** White Powder

**Primary Routes of Entry:** Skin contact, skin absorption, eye contact, ingestion: Hazard Classification - None. (Historical basis for classification.)

**Target Organs:** Eye, skin and lungs

**Medical Conditions Aggravated by Exposure:** Skin contact may aggravate existing dermatitis. Breathing excessive quantities of ground limestone dust may aggravate pre-existing respiratory conditions.

#### Potential Health Effects:

**Eye Contact:** This product may produce irritation upon contact with the eye. See also Section 4 below.

**Skin Contact:** Prolonged or repeated exposure may cause skin irritation. Ground limestone is not expected to be absorbed through the skin in harmful amounts or to produce an allergic skin reaction. See also Section 4 below.

**Ingestion:** No adverse effect is expected. If ingested, seek medical advice. See also Section 4 below.

**Inhalation:** Inhalation of excessive quantities of ground limestone dust may irritate the respiratory tract. See also Section 4 below.

**Subchronic, Chronic:** None expected. No applicable information was found concerning any potential health effects resulting from subchronic or chronic exposure to ground limestone.

This product typically contains crystalline silica (quartz sand) above 0.1% as a naturally occurring impurity. The International Agency for Research on Cancer has concluded that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group I)." It also noted that carcinogenicity was not detected in all industrial circumstance studies, and may be dependent on external factors affecting its biological activity or distribution of its polymorphs. (See IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68

(1997).) Exposure to respirable silica has also been associated with silicosis, scleroderma, and nephrotoxicity. (See Occupational Lung Disorders, Third Edition, Chapter 12 (1994) and American Journal of Respiratory and Critical Care Medicine, Volume 155, pp 761-765 (1997).)

#### Section 4 - First Aid Measures

**Eye Contact:** Follow good industrial hygiene practices. In case of contact, immediately flush eyes with plenty of water. Seek medical aid if necessary.

**Skin Contact:** Follow good industrial hygiene practices. Wash affected skin areas thoroughly with soap and water. Seek medical aid if necessary.

**Inhalation:** Follow good industrial hygiene practices. If excessive exposure by inhalation is suspected, remove to fresh air. If necessary, a MSHA/NIOSH or OSHA/NIOSH approved respirator is recommended. Seek medical aid if necessary.

**Ingestion:** Follow good industrial hygiene practices. If ingested, do not induce vomiting. If conscious, drink two glasses of water. Seek medical aid if necessary.

#### Section 5 - Fire Fighting Measures

**Explosion Data:** Not Explosive

**LEL:** Not Applicable

**UEL:** Not Applicable

**Extinguishing Media:** Product will not burn.

**NFPA 704M Hazard Classification:** Health: 1 Flammable: 0 Reactivity: 0

**Flammability:** Not Flammable or Combustible

**Flash Point:** Not Applicable

**Auto-Ignition:** Not Applicable

Use appropriate extinguishing media for packaging material if applicable.

#### Section 6 - Accidental Release Measures

Vacuum, pump or scoop spilled material into containers for reclaiming or disposal. Use proper respiratory and personal protective equipment. MSHA/NIOSH or OSHA/NIOSH approved respirator recommended. Spilled materials may cause slippery conditions when wet. Care should be exercised when walking on spills on floors or concrete pads. No neutralizing chemicals required. Material is inert and nonreactive. Ground limestone is not a CERCLA listed hazardous substance.

#### Section 7 - Handling and Storage

Storage in a cool, dry location is recommended.

Keep away from acids.

Spilled materials may cause slippery conditions when wet. Care should be exercised when walking on spills on floors or concrete pads.

Minimize dust generation & accumulation.

If excessive dust is generated, provide adequate ventilation and use proper respiratory and personal protective equipment. MSHA/NIOSH or OSHA/NIOSH approved respirator recommended

#### Section 8 - Exposure Control/Personal Protection

<u>Hazardous Ingredient</u>	<u>Weight % (Approx.)</u>	<u>CAS No.</u>	<u>MSHA PEL</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
		1317-65-3	10mg/cu.m. Total	15mg/cu.m. Total 5 mg/cu.m. Resp.	2 mg/cu.m. Respirable
Crystalline Silica, Quartz	0.1% - 0.75%	14808-60-7	5 mg/m <sup>3</sup> Resp.	0.1 mg/m <sup>3</sup> Resp.	0.025 mg/m <sup>3</sup> Resp.

Unless otherwise noted, all PEL and TLV values are reported as 8 hour time weighted averages (TWA).

**Respiratory Protection:** If respirator is required, use of a MSHA/NIOSH or OSHA/NIOSH approved respirator is recommended.

**Ventilation:** Use exhaust ventilation, if required, to maintain dust concentration below recommended exposure limits.

**Protective Equipment:** Wear side shield safety glasses. Rubber gloves are recommended for prolonged exposure.

#### Section 9 - Physical and Chemical Properties

<b>Physical State:</b>	Solid	<b>Boiling Point:</b>	Not Applicable
<b>Appearance &amp; Odor:</b>	Odorless, white powder	<b>Freezing Point:</b>	Not Applicable
<b>pH (Aqueous Suspension):</b>	9 - 10	<b>Vapor Pressure:</b>	Not Applicable
<b>Specific Gravity:</b>	~2.7	<b>Vapor Density:</b>	Not Applicable
<b>% Solubility in Water:</b>	1.4 mg/100 ml @ 25°C	<b>VOC:</b>	None
<b>Melting Point:</b>	825°C	<b>Evaporation Rate:</b>	Not Applicable

#### Section 10 - Stability and Reactivity

Chemically Stable? Yes X No \_\_\_

Compatible with Other Substances? Yes X No \_\_\_ (See below)

Hazardous Decomposition/By-Products: No hazardous decomposition or by-products expected.

Conditions Contributing to Hazardous Polymerization: None, inert and nonreactive.

Incompatibility (Materials to Avoid): Will react with acids to produce carbon dioxide gases.

### Section 11 - Disposal Considerations

EPA Waste Number: Under RCRA (40 CFR 261) ground limestone is a non-hazardous waste. Dispose of waste material in accordance with all local, state and federal requirements.

### Section 12 - Toxicological Information

Ground limestone - CAS No. 1317-65-3

Primary Route of Exposure: X Skin; X Eye Contact; X Inhalation; X Ingestion

#### Acute Health Hazards:

Eye contact may cause mechanical irritation. Calcium carbonate is a severe eye irritant .

Skin contact may aggravate existing dermatitis. Calcium carbonate is a moderate skin irritant .

Inhalation from prolonged and continuous exposure to excessive quantities of dust may aggravate existing asthmatic or respiratory conditions.

Calcium carbonate Oral LD(50) in rats is 6450 mg/kg .

#### Chronic Health Hazards\*:

Carcinogenicity\*: NTP? No IARC? No OSHA? No

Mutagenicity: None known Teratogenicity: None known Reproductive Effects: None known

\* Dangerous Properties of Industrial Materials, 7th Edition, pp 667, Sax and Lewis 1989.

\* See Section 3 for discussion of crystalline silica.

### Section 13 - Transport Information

EPA Waste Number: Not Regulated

DOT Classification: Not Regulated DOT/IMO Classification: Not Regulated

Internal UN: Not Regulated

### Section 14 - Regulatory Information

SARA Title III Section 302 Extremely Hazardous Substances: This product does not contain extremely hazardous substances subject to the reporting requirements of Section 302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 355.

SARA Title III Section 311 and 312 Health and Physical Hazard Categories per 40 CFR 370.2:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
Yes	Yes	No	No	No

SARA Section 313 Notification: This product does not contain toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

TSCA: Product is listed in Initial Inventory, Vol. 1, Appendix A, CAS No. 1317-65-3.

The International Agency for Research on Cancer has concluded that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group I)." It also noted that carcinogenicity was not detected in all industrial circumstance studies, and may be dependent on external factors affecting its biological activity or distribution of its polymorphs. (See IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68 (1997).) Exposure to respirable silica has also been associated with silicosis, scleroderma, and nephrotoxicity. (See Occupational Lung Disorders, Third Edition, Chapter 12 (1994) and American Journal of Respiratory and Critical Care Medicine, Volume 155, pp 761-765 (1997).)

WARNING: This product may also contain extremely small amounts of one or more naturally-occurring materials known to the State of California to cause cancer, birth defects, or other reproductive harm.

While this information and recommendations set forth herein are believed to be accurate as of the date hereof, IMERY'S PIGMENTS & ADDITIVES GROUP MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

IMERY'S is a business name of IMERY'S Pigments, Inc., IMERY'S Kaolin, Inc. and IMERY'S Marble, Inc. Registered in the USA. Registered Office: 100 Mansell Court East, Suite 300, Roswell, GA 30076.

Date Prepared: 07/27/82

Revised: 08/2008

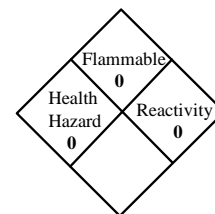






# WYO-BEN, INC.

## MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD  
IDENTIFICATION SYSTEM

### I. PRODUCT IDENTIFICATION

Trade Name(s): **ENVIROPLUG® GROUT**

Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9)

Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0)

Manufacturer: **WYO-BEN, INC.**  
Address: P.O. Box 1979  
Billings, Montana 59103

Telephone Numbers:  
Information: (406) 652-6351  
EMERGENCY: (406) 652-6351

### II. HAZARDOUS INGREDIENTS

Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO <sub>2</sub> ) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO <sub>2</sub> ) in the form of quartz may be present in airborne bentonite dust. See Section VI for discussion of health hazard.

Note: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10 μ respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.

### III. PHYSICAL DATA

Boiling Point (°F): NA	Specific Gravity (H <sub>2</sub> O=1): 2.45-2.55
Vapor Pressure (mm. Hg): NA	Melting Point: Approx. 1450°C
Vapor Density (Air = 1): NA	Evaporation Rate (Butyl Acetate = 1): NA
Solubility in Water: Insoluble, forms colloidal suspension.	pH: 8-10 (5% aqueous suspension)
Density (at 20° C): 55 lbs./cu.ft. as product.	
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.	

### IV. FIRE AND EXPLOSION DATA

Flash Point: NA	Flammable Limits: LEL: NA UEL: NA
Special Fire Fighting Procedures: NA	
Unusual Fire and Explosion Hazards: None. Product will not support combustion.	
Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.	

### V. REACTIVITY

Stability: Stable
Hazardous Polymerization: None
Incompatibility: None
Hazardous Decomposition Products: None
NA = Not Applicable ND = Not Determined

## VI. HEALTH HAZARD INFORMATION

### Routes of Exposure and Effects:

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: *Acute* (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ( $\leq 10 \mu$ ) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion may be symptomatic.

Ingestion: No adverse effects.

### Permissible Exposure Limits:

(for air contaminants)

Bentonite as "Particulates not otherwise regulated"  
(formerly nuisance dust)

Total dust

Respirable dust

Crystalline Silica: Quartz (respirable)

OSHA PEL

(8hr. TWA)

15mg/m<sup>3</sup>

5mg/m<sup>3</sup>

10 mg/m<sup>3</sup>

% Silica + 2

ACGIH TLV

ND

ND

0.025 mg/m<sup>3</sup>

**Carcinogenicity:** Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9<sup>th</sup> Report on Carcinogens – 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Acute Oral LD<sub>50</sub>: ND

Acute Dermal LD<sub>50</sub>: ND

Aquatic Toxicology LC<sub>50</sub>: ND

### Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

## VII. HANDLING AND USE PRECAUTIONS

**Steps to be Taken if Material is Released or Spilled:** Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

**Waste Disposal Methods:** Product should be disposed of in accordance with applicable local, state and federal regulations.

**Handling and Storage Precautions:** Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

## VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

**Ventilation Requirements:** Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

**Respirator:** Use respirators approved by NIOSH/MSHA for silica bearing dust.

**Eye Protection:** Generally not necessary. Personal preference.

**Gloves:** Generally not necessary. Personal preference.

**Other Protective Clothing or Equipment:** None

## IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

## DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Date Prepared: October 5, 2007

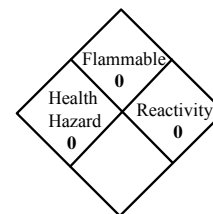
Doc #: 4250-00

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# WYO-BEN, INC.

## MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD  
IDENTIFICATION SYSTEM

### I. PRODUCT IDENTIFICATION

Trade Name(s): **ENVIROPLUG® MEDIUM**

Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9)

Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0)

Manufacturer: **WYO-BEN, INC.**  
Address: P.O. Box 1979  
Billings, Montana 59103

Telephone Numbers:  
Information: (406) 652-6351  
EMERGENCY: (406) 652-6351

### II. HAZARDOUS INGREDIENTS

Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO <sub>2</sub> ) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO <sub>2</sub> ) in the form of quartz may be present in airborne bentonite dust. See Section VI for discussion of health hazard.

Note: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10 μ respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.

### III. PHYSICAL DATA

Boiling Point (°F): NA	Specific Gravity (H <sub>2</sub> O=1): 2.45-2.55
Vapor Pressure (mm. Hg): NA	Melting Point: Approx. 1450°C
Vapor Density (Air = 1): NA	Evaporation Rate (Butyl Acetate = 1): NA
Solubility in Water: Insoluble, forms colloidal suspension.	pH: 8-10 (5% aqueous suspension)
Density (at 20° C): 55-68 lbs./cu.ft. as product.	
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.	

### IV. FIRE AND EXPLOSION DATA

Flash Point: NA	Flammable Limits: LEL: NA UEL: NA
Special Fire Fighting Procedures: NA	
Unusual Fire and Explosion Hazards: None. Product will not support combustion.	
Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.	

### V. REACTIVITY

Stability: Stable
Hazardous Polymerization: None
Incompatibility: None
Hazardous Decomposition Products: None
NA = Not Applicable ND = Not Determined

## VI. HEALTH HAZARD INFORMATION

### Routes of Exposure and Effects:

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: *Acute* (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ( $\leq 10 \mu\text{m}$ ) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion may be symptomatic.

Ingestion: No adverse effects.

### Permissible Exposure Limits:

(for air contaminants)

Bentonite as "Particulates not otherwise regulated"  
(formerly nuisance dust)

Total dust

Respirable dust

Crystalline Silica: Quartz (respirable)

OSHA PEL

(8hr. TWA)

15mg/m<sup>3</sup>

5mg/m<sup>3</sup>

10 mg/m<sup>3</sup>

% Silica + 2

ACGIH TLV

ND

ND

0.025 mg/m<sup>3</sup>

**Carcinogenicity:** Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9<sup>th</sup> Report on Carcinogens – 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Acute Oral LD<sub>50</sub>: ND

Acute Dermal LD<sub>50</sub>: ND

Aquatic Toxicology LC<sub>50</sub>: ND

### Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

## VII. HANDLING AND USE PRECAUTIONS

**Steps to be Taken if Material is Released or Spilled:** Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

**Waste Disposal Methods:** Product should be disposed of in accordance with applicable local, state and federal regulations.

**Handling and Storage Precautions:** Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

## VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

**Ventilation Requirements:** Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

**Respirator:** Use respirators approved by NIOSH/MSHA for silica bearing dust.

**Eye Protection:** Generally not necessary. Personal preference.

**Gloves:** Generally not necessary. Personal preference.

**Other Protective Clothing or Equipment:** None

## IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

## DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Date Prepared: October 5, 2007

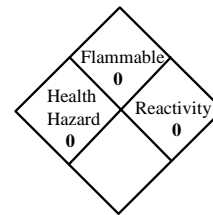
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# WYO-BEN, INC.

## MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD  
IDENTIFICATION SYSTEM

I. PRODUCT IDENTIFICATION			
Trade Name(s): <b>GROUT-WELL®</b>			
Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9) and other proprietary ingredients			
Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0) and other proprietary ingredients			
Manufacturer: <b>WYO-BEN, INC.</b>		Telephone Numbers:	
Address: P.O. Box 1979 Billings, Montana 59103		Information: (406) 652-6351 EMERGENCY: (406) 652-6351	
II. HAZARDOUS INGREDIENTS			
Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO <sub>2</sub> ) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO <sub>2</sub> ) in the form of quartz may be present in airborne bentonite dust. See Section VI for discussion of health hazard.
<p>Note 1: The specific chemical identity of this product is being withheld as a trade secret. In the event of a medical emergency it will be provided to a treating medical professional under the provisions of 29 CFR 1910.1200(i).</p> <p>Note 2: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10 μ respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.</p>			
III. PHYSICAL DATA			
Boiling Point (°F): NA		Specific Gravity (H <sub>2</sub> O=1): 2.45-2.55	
Vapor Pressure (mm. Hg): NA		Melting Point: Approx. 1450°C	
Vapor Density (Air = 1): NA		Evaporation Rate (Butyl Acetate = 1): NA	
Solubility in Water: Insoluble, forms colloidal suspension.		pH: 8-10 (5% aqueous suspension)	
Density (at 20° C): 55 lbs./cu.ft. as product.			
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.			
IV. FIRE AND EXPLOSION DATA			
Flash Point: NA		Flammable Limits: LEL: NA UEL: NA	
Special Fire Fighting Procedures: NA			
Unusual Fire and Explosion Hazards: None. Product will not support combustion.			
Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.			
V. REACTIVITY			
Stability: Stable			
Hazardous Polymerization: None			
Incompatibility: None			
Hazardous Decomposition Products: None			
NA = Not Applicable		ND = Not Determined	

## VI. HEALTH HAZARD INFORMATION

### Routes of Exposure and Effects:

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: *Acute* (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ( $< 10 \mu$ ) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion may be symptomatic.

Ingestion: No adverse effects.

### Permissible Exposure Limits:

(for air contaminants)

Bentonite as "Particulates not otherwise regulated"  
(formerly nuisance dust)

Total dust

Respirable dust

Crystalline Silica: Quartz (respirable)

OSHA PEL

(8hr. TWA)

15mg/m<sup>3</sup>

5mg/m<sup>3</sup>

10 mg/m<sup>3</sup>

% Silica + 2

ACGIH TLV

ND

ND

0.025 mg/m<sup>3</sup>

**Carcinogenicity:** Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9<sup>th</sup> Report on Carcinogens – 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Acute Oral LD<sub>50</sub>: ND

Acute Dermal LD<sub>50</sub>: ND

Aquatic Toxicology LC<sub>50</sub>: ND

### Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

## VII. HANDLING AND USE PRECAUTIONS

**Steps to be Taken if Material is Released or Spilled:** Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

**Waste Disposal Methods:** Product should be disposed of in accordance with applicable local, state and federal regulations.

**Handling and Storage Precautions:** Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

## VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

**Ventilation Requirements:** Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

**Respirator:** Use respirators approved by NIOSH/MSHA for silica bearing dust.

**Eye Protection:** Generally not necessary. Personal preference.

**Gloves:** Generally not necessary. Personal preference.

**Other Protective Clothing or Equipment:** None

## IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

## DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Date Prepared: October 5, 2007

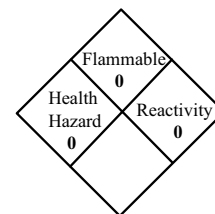
Doc #: 4330-00

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# WYO-BEN, INC.

## MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD  
IDENTIFICATION SYSTEM

### I. PRODUCT IDENTIFICATION

Trade Name(s): <b>HYDROGEL<sup>®</sup></b>	
Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9)	
Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0)	
Manufacturer: <b>WYO-BEN, INC.</b> Address: P.O. Box 1979 Billings, Montana 59103	Telephone Numbers: Information: (406) 652-6351 EMERGENCY: (406) 652-6351

### II. HAZARDOUS INGREDIENTS

Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO <sub>2</sub> ) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO <sub>2</sub> ) in the form of quartz may be present in airborne bentonite dust. See Section VI for discussion of health hazard.

Note: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10  $\mu$  respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.

### III. PHYSICAL DATA

Boiling Point (°F): NA	Specific Gravity (H <sub>2</sub> O=1): 2.45-2.55
Vapor Pressure (mm. Hg): NA	Melting Point: Approx. 1450°C
Vapor Density (Air = 1): NA	Evaporation Rate (Butyl Acetate = 1): NA
Solubility in Water: Insoluble, forms colloidal suspension.	pH: 8-10 (5% aqueous suspension)
Density (at 20° C): 55 lbs./cu.ft. as product.	
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.	

### IV. FIRE AND EXPLOSION DATA

Flash Point: NA	Flammable Limits: LEL: NA UEL: NA
Special Fire Fighting Procedures: NA	
Unusual Fire and Explosion Hazards: None. Product will not support combustion.	
Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.	

### V. REACTIVITY

Stability: Stable
Hazardous Polymerization: None
Incompatibility: None
Hazardous Decomposition Products: None
NA = Not Applicable ND = Not Determined

## VI. HEALTH HAZARD INFORMATION

### Routes of Exposure and Effects:

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: *Acute* (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ( $\leq 10 \mu$ ) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion may be symptomatic.

Ingestion: No adverse effects.

### Permissible Exposure Limits:

(for air contaminants)

Bentonite as "Particulates not otherwise regulated"  
(formerly nuisance dust)

Total dust

Respirable dust

Crystalline Silica: Quartz (respirable)

OSHA PEL

(8hr. TWA)

15mg/m<sup>3</sup>

5mg/m<sup>3</sup>

10 mg/m<sup>3</sup>

% Silica + 2

ACGIH TLV

ND

ND

0.025 mg/m<sup>3</sup>

**Carcinogenicity:** Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9<sup>th</sup> Report on Carcinogens – 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Acute Oral LD<sub>50</sub>: ND

Acute Dermal LD<sub>50</sub>: ND

Aquatic Toxicology LC<sub>50</sub>: ND

### Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

## VII. HANDLING AND USE PRECAUTIONS

**Steps to be Taken if Material is Released or Spilled:** Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

**Waste Disposal Methods:** Product should be disposed of in accordance with applicable local, state and federal regulations.

**Handling and Storage Precautions:** Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

## VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

**Ventilation Requirements:** Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

**Respirator:** Use respirators approved by NIOSH/MSHA for silica bearing dust.

**Eye Protection:** Generally not necessary. Personal preference.

**Gloves:** Generally not necessary. Personal preference.

**Other Protective Clothing or Equipment:** None

## IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

## DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Date Prepared: October 5, 2007

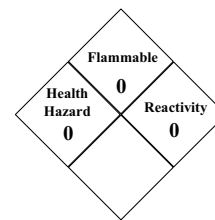
Doc #: 1020-00

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# WESTERN HYDRO CORPORATION

## MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD  
IDENTIFICATION SYSTEM

### I. PRODUCT IDENTIFICATION

Trade Name(s): **HYDRO PLUG 3/8**

Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9)

Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0)

Manufacturer: **WYO-BEN, INC.** for **WESTERN HYDRO CORP.**  
Address: P.O. Box 1979 3449 Enterprise Ave  
Billings, MT 59103 Hayward, CA 94545

Telephone Numbers:  
**Wyo-Ben, Inc.: (406) 652-6351**  
**Western Hydro Corp.: (510) 783-9166**

### II. HAZARDOUS INGREDIENTS

Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO <sub>2</sub> ) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO <sub>2</sub> ) in the form of quartz, may be present in airborne bentonite dust. See Section VI for discussion of health hazard.

Note: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10  $\mu$  respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.

### III. PHYSICAL DATA

Boiling Point (°F): NA	Specific Gravity (H <sub>2</sub> O=1): 2.45-2.55
Vapor Pressure (mm. Hg): NA	Melting Point: Approx. 1450°C
Vapor Density (Air = 1): NA	Evaporation Rate (Butyl Acetate = 1): NA
Solubility in Water: Insoluble, forms colloidal suspension.	pH: 8-10 (5% aqueous suspension)
Density (at 20° C): 68 lbs/cu .ft. as product.	
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.	

### IV. FIRE AND EXPLOSION DATA

Flash Point: NA	Flammable Limits: LEL: NA UEL: NA
Special Fire Fighting Procedures: NA	
Unusual Fire and Explosion Hazards: None. Product will not support combustion.	
Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.	

### V. REACTIVITY

Stability: Stable
Hazardous Polymerization: None
Incompatibility: None
Hazardous Decomposition Products: None

NA = Not Applicable ND = Not Determined

Date Updated: October 5, 2007

Doc #: 4945-82

## VI. HEALTH HAZARD INFORMATION

### Routes of Exposure and Effects:

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: *Acute* (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ( $\leq 10 \mu$ ) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion maybe are symptomatic.

Ingestion: No adverse effects.

### Permissible Exposure Limits: (for air contaminants)

OSHA PEL  
(8hr. TWA)

ACGIH TLV

Bentonite as "Particulates not otherwise regulated"  
(formerly nuisance dust)

Total dust

15mg/m<sup>3</sup>

ND

Respirable dust

5mg/m<sup>3</sup>

ND

Crystalline Silica: Quartz (respirable)

10 mg/m<sup>3</sup>  
% Silica + 2

0.025 mg/m<sup>3</sup>

Carcinogenicity: Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9<sup>th</sup> Report on Carcinogens – 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Acute Oral LD<sub>50</sub>: ND

Acute Dermal LD<sub>50</sub>: ND

Aquatic Toxicology LC<sub>50</sub>: ND

### Emergency and First Aid Procedures:

Skin: Wash with soap and water until clean.

Eyes: Flush with water until irritation ceases.

Inhalation: Move to area free from dust. If symptoms of irritation persist contact physician. Inhalation may aggravate existing respiratory illness.

## VII. HANDLING AND USE PRECAUTIONS

Steps to be Taken if Material is Released or Spilled: Avoid breathing dust; wear respirator approved for silica bearing dust. Vacuum up to avoid generating airborne dust. Avoid using water. Product slippery when wetted.

Waste Disposal Methods: Product should be disposed of in accordance with applicable local, state and federal regulations.

Handling and Storage Precautions: Use NIOSH/MSHA respirators approved for silica bearing dust when free silica containing airborne bentonite dust levels exceed PEL/TLV's. Clean up spills promptly to avoid making dust. Storage area floors may become slippery if wetted.

## VIII. INDUSTRIAL HYGIENE CONTROL MEASURES

Ventilation Requirements: Mechanical, general room ventilation. Use local ventilation to maintain PEL's/TLV's.

Respirator: Use respirators approved by NIOSH/MSHA for silica bearing dust.

Eye Protection: Generally not necessary. Personal preference.

Gloves: Generally not necessary. Personal preference.

Other Protective Clothing or Equipment: None

## IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

## DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Date Updated: October 5, 2007

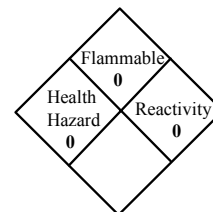
Doc #: 4945-82

*All information presented herein is believed to be accurate; however, it is the user's responsibility to determine in advance of need that the information is current and suitable for their circumstances. No warranty or guarantee, expressed or implied is made by WYO-BEN, INC. as to this information, or as to the safety, toxicity or effect of the use of this product.*



# WYO-BEN, INC.

## MATERIAL SAFETY DATA SHEET



NFPA FIRE HAZARD  
IDENTIFICATION SYSTEM

I. PRODUCT IDENTIFICATION			
Trade Name(s): <b>TRU-BORE®</b>			
Generic Name(s): Wyoming (Western) Bentonite; Bentonite Clay (CAS No. 1302-78-9) and other proprietary ingredients			
Chemical Name(s): Sodium Montmorillonite (CAS No. 1318-93-0) and other proprietary ingredients			
Manufacturer: <b>WYO-BEN, INC.</b>		Telephone Numbers:	
Address: P.O. Box 1979 Billings, Montana 59103		Information: (406) 652-6351 EMERGENCY: (406) 652-6351	
II. HAZARDOUS INGREDIENTS			
Ingredient	CAS NO.	%	Hazard
Crystalline Silica (SiO <sub>2</sub> ) as Quartz	14808-60-7	See Note	Low concentrations of crystalline silica (SiO <sub>2</sub> ) in the form of quartz may be present in airborne bentonite dust. See Section VI for discussion of health hazard.
<p>Note 1: The specific chemical identity of this product is being withheld as a trade secret. In the event of a medical emergency it will be provided to a treating medical professional under the provisions of 29 CFR 1910.1200(i).</p> <p>Note 2: Although the typical quartz content of western bentonite is in the range of 2 to 6% most of the quartz particles are larger than the 10 μ respirable threshold size. The actual respirable quartz concentration in airborne bentonite dust will depend upon bentonite source, fineness of product, moisture content of product, local humidity and wind condition at point of use and other use specific factors.</p>			
III. PHYSICAL DATA			
Boiling Point (°F): NA		Specific Gravity (H <sub>2</sub> O=1): 2.45-2.55	
Vapor Pressure (mm. Hg): NA		Melting Point: Approx. 1450°C	
Vapor Density (Air = 1): NA		Evaporation Rate (Butyl Acetate = 1): NA	
Solubility in Water: Insoluble, forms colloidal suspension.		pH: 8-10 (5% aqueous suspension)	
Density (at 20° C): 55 lbs./cu.ft. as product.			
Appearance and Odor: Bluegray to green as moist solid, light tan to gray as dry powder. No odor.			
IV. FIRE AND EXPLOSION DATA			
Flash Point: NA		Flammable Limits: LEL: NA UEL: NA	
Special Fire Fighting Procedures: NA			
Unusual Fire and Explosion Hazards: None. Product will not support combustion.			
Extinguishing Media: None for product. Any media can be used for the packaging. Product becomes slippery when wet.			
V. REACTIVITY			
Stability: Stable			
Hazardous Polymerization: None			
Incompatibility: None			
Hazardous Decomposition Products: None			
NA = Not Applicable		ND = Not Determined	

## VI. HEALTH HAZARD INFORMATION

**Routes of Exposure and Effects:**

Skin: Possible drying resulting in dermatitis.

Eyes: Mechanical irritant.

Inhalation: *Acute* (short term) exposure to dust levels exceeding the PEL may cause irritation of respiratory tract resulting in a dry cough. *Chronic* (long term) exposure to airborne bentonite dust containing respirable size ( $\leq 10 \mu$ ) quartz particles, where respirable quartz particle levels are higher than TLV's, may lead to development of silicosis or other respiratory problems. Persistent dry cough and labored breathing upon exertion may be symptomatic.

Ingestion: No adverse effects.

**Permissible Exposure Limits:**

(for air contaminants)

Bentonite as "Particulates not otherwise regulated"  
(formerly nuisance dust)

Total dust

Respirable dust

Crystalline Quartz (respirable)

OSHA PEL

(8hr. TWA)

15mg/m<sup>3</sup>

5mg/m<sup>3</sup>

0.1mg/m<sup>3</sup>

ACGIH TLV

ND

ND

0.1mg/m<sup>3</sup>

**Carcinogenicity:** Bentonite is not listed by ACGIH, IARC, NTP or OSHA. IARC, 1997, concludes that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica from occupational sources (IARC Class 1), that carcinogenicity was not detected in all industrial circumstances studied and that carcinogenicity may depend on characteristics of the crystalline silica or on external factors affecting its biological activity. NTP classifies respirable crystalline silica as "known to be a human carcinogen" (NTP 9<sup>th</sup> Report on Carcinogens – 2000). ACGIH classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

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**Respirator:** Use respirators approved by NIOSH/MSHA for silica bearing dust.

**Eye Protection:** Generally not necessary. Personal preference.

**Gloves:** Generally not necessary. Personal preference.

**Other Protective Clothing or Equipment:** None

## IX. SPECIAL PRECAUTIONS

Avoid prolonged inhalation of airborne dust.

## DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIAL INFORMATION

Shipping Name: NA (Not Regulated)

Hazard Class: NA

Hazardous Substance: NA

Caution Labeling: NA

Updated: March 15, 2004

Doc #: 4375-00

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