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## **MSDS MATERIAL SAFETY DATA SHEETS**

*Some contractors talk customer satisfaction.....we guarantee it!*

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**MATERIAL SAFETY DATA SHEET - NOKORODE® REGULAR PASTE FLUX**

MSDS049  
Ver. No.  
Ver. Date June 22, 2001

**SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME: Nokorode® Regular Paste Flux  
PRODUCT CODES: 14000, 14010, 14020, 14030  
CHEMICAL FAMILY: Organic/Inorganic  
USE: Soft Soldering Flux  
MANUFACTURER / SUPPLIER  
RectorSeal  
2601 Sperrywick  
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NUMBERS:  
Chemtrec 24 hours: (800) 424-9300  
RectorSeal: (713) 263-8001

NON EMERGENCY TELEPHONE NUMBERS:  
Technical Service: (800) 231-3345

**SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS**

HAZARDOUS COMPONENTS	CAS NO.	APPROX %	OSHA PEL	ACGIH TLV	OTHER LIMITS	HMS	NFPA
Zinc Chloride	7646-85-7	10-25	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup> STEL	ND	ND
Ammonium Chloride	12125-02-9	10-25	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	20 mg/m <sup>3</sup> STEL	H1,F0,R0	H1,F0,R0
Petrolatum	8009-03-8	-	ND	ND	ND	ND	ND

**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	PRIMARY ROUTE(S)
INHALATION:	Irritation to respiratory system from fumes evolved during soldering.	Yes
EYE CONTACT:	Contact may cause intense irritation and injury.	Yes
SKIN CONTACT:	May cause skin irritation.	Yes
INGESTION:	Chemical burns to digestive system and mucosal surface. May be fatal.	No

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 GENERALLY 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**

INHALATION: 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.

EYE CONTACT: Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.

SKIN CONTACT: Immediately flush with large amounts of water; use soap if available. Remove contaminated clothing.

INGESTION: If swallowed, DO NOT induce vomiting. Give victim a glass of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

**SECTION 5 FIRE FIGHTING MEASURES**

FLASH POINT: >399°F (204°C)

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.

FLAMMABILITY LIMITS: LEL: N/A UEL: N/A

**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 and upright when not in use. Store in a cool, dry, well-ventilated area. Keep away from heat and open flame. Wash thoroughly after handling to remove all residue.

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 breathe soldering fumes. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

# MATERIAL SAFETY DATA SHEET - NOKORODE® REGULAR PASTE FLUX

MSDS0495

Ver. No. 1

Ver. Date June 22, 2000

## 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:** Maintain air flow away from user to exhaust soldering fumes and vapors.  
**MECHANICAL (GENERAL):** Acceptable

SPECIAL: N/A

OTHER: N/A

**PROTECTIVE GLOVES:** Wear non-permeable gloves.  
**EYE PROTECTION:** Chemical splash goggles (ANSI Z-87.1 or equivalent).

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Full protective equipment normally used in soldering operation so as to prevent any contact. Review operations to avoid contact with the hazardous gas, liquids or solids.

**WORKHYGIENE 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

**VAPOR PRESSURE (mm Hg):** < 0.01 @ 68°F (20°C)

**VAPOR DENSITY (AIR = 1):** > 1

**SOLUBILITY IN WATER:** Insoluble

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 1.06

**MELTING POINT:** 120-150°F (52-66°C)

**EVAPORATION RATE (ETHYL ACETATE = 1):** N/A

**APPEARANCE/ODOR:** Tan/Gold to Black Paste, Slight Petroleum Odor

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Stable

**CONDITIONS TO AVOID:** ND

**INCOMPATIBILITY (MATERIALS TO AVOID):** Strong bases

**HAZARDOUS DECOMPOSITION PRODUCTS:** Toxic fumes of zinc, chlorine, and HCl may be evolved during soldering.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## SECTION 11 TOXICOLOGY INFORMATION

**CARCINOGENICITY:**

NTP: No

IARC MONOGRAPHS: No

OSHA REGULATED: No

SUBSTANCE	CAS NO.	LD50	LC50
Zinc Chloride	7646-85-7	Oral-Rat LD50: 250 mg/kg	Inhalation-Rat LC <sub>50</sub> : 1960 mg/m <sup>3</sup> /10M
Ammonium Chloride	12125-02-9	Oral-Rat LD50: 1650 mg/kg	ND
Petroleum	8009-03-8	ND	ND

## SECTION 12 ECOLOGICAL INFORMATION

SUBSTANCE	FOOD CHAIN CON POTENTIAL	WATERFOWL TOXICITY	BOD	AQUATIC TOXICITY
Zinc Chloride	None	N/A	None	7.2 ppm/96 hr median bioassay TLm
Ammonium Chloride	N/A	N/A	N/A	6 ppm/96 hr sunfish TLm
Petroleum	ND	ND	ND	ND

## SECTION 13 DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL METHOD:** Dispose of material in accordance with all local, state and federal regulations.

## SECTION 14 TRANSPORTATION INFORMATION

DOT: Non-Regulated

OCEAN (IMDG): Non-Regulated

AIR (IATA): Non-Regulated

WHMS (CANADA): Non-Regulated

## SECTION 15 REGULATORY INFORMATION

SUBSTANCE	SARA 313	TSCA INVENTORY	CERCLA RQ	RCRA CODE
Zinc Chloride	Yes	Yes	1,000 lb.	N/A
Ammonium Chloride	No	Yes	N/A	N/A
Petroleum	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 Rector Seal for further information: (713) 253-8001.



235 Kilvert Street  
Warwick, RI 02886

A World-Class Quality Partner  
ISO 9001:2000  
Certified

**PRODUCT: SILVABRITE 100<sup>®</sup>  
LEAD-FREE SOLDER**

**DESCRIPTION:**

SILVABRITE 100<sup>®</sup> was developed to meet market demands for a safe and easy to use solder for drinking water systems and other applications.

**CHARACTERISTICS:**

SILVABRITE 100<sup>®</sup> is a lead-free and antimony-free, non-toxic solder which contains the same safe metals used in dental fillings. It offers a low melting point and wide melting range for excellent flow and control. SILVABRITE 100<sup>®</sup> also creates strong, corrosion resistant and leak-tight joints.

**ADVANTAGES:**

1. Lead-free composition
2. Easy to use
3. Excellent "capping off" ability
4. Excellent penetration and flow
5. Higher shear, creep and tensile strength than 50/50
6. Good appearance

**STANDARD FORMS:**

- Wire – Solid, Acid Core, Rosin Core and Organic Core available in a variety of standard and custom diameters
- Preforms – Custom manufactured rings, punchings or spheres
- Bars – Bulk alloys

**APPLICATIONS:**

SILVABRITE 100<sup>®</sup> is suitable for joining copper, steel, stainless steel, nickel metals and alloys. It is most often applied by torch heating or soldering iron, but can be used with all conventional heating methods. SILVABRITE 100<sup>®</sup> should be used with Wolverine General Purpose Soldering Flux or SILVABRITE 100<sup>®</sup> Water Soluble Flux. Its flow and wetting action are excellent.

	Composition			Initial Temp.	Recommended Temp. Range
	Tin	Copper	Silver		
SILVABRITE 100 <sup>®</sup>	95.6%	4%	0.4%	440°F	440-500°F
SILVABRITE <sup>®</sup>	96%	---	4%	430°F	430-450°F
SILVABRITE STM	95%	--	5%	430°F	430-550°F

\*Total impurities are present in levels less than 0.0015 (0.15%)  
SILVABRITE 100<sup>®</sup> is a registered trademark of Wolverine Joining Technologies.  
SILVABRITE 100<sup>®</sup> is listed by IAPMO plumbing codes.



**PRODUCT: SILVABRITE 100<sup>®</sup> - CONTINUED**

**Electrical Conductivity (% IACS)**

SILVABRITE 100 <sup>®</sup>	12.0
60/40 Tin	11.5

**Density (lbs./cu. in.)**

SILVABRITE 100 <sup>®</sup>	.266
SILVABRITE <sup>®</sup>	.267
SILVABRITE S <sup>™</sup>	.267

**Bulk Room Temperature Tensile Strength**

SILVABRITE 100 <sup>®</sup>	6,900 psi
50/50 Tin-Lead	6,000 psi
95/5 Tin-Antimony	6,400 psi

**Pressure Rupture Test:**

Soldered joints using SILVABRITE 100<sup>®</sup> and L type copper tube (up to 1" diameter) at room temperature, 250°F and 300°F, withstood pressure to the extent that failure occurred in the copper tube and not the soldered joint.

**Stress Rupture Test (Creep Strength):**

Standard 1/2" copper couplings are soldered in this test and put under constant loads. The time in which the joint failed by breaking is indicated in the table below:

Solder	1,700 lbs.	1,500 lbs.	1,200 lbs.	700 lbs.	500 lbs.
SILVABRITE 100 <sup>®</sup>	5 days	7-8 days	144 days	--	--
50/50 Tin-Lead	<1 day	<1 day	<1 day	5-7 days	33 days

**Corrosion Test Data:**

Using standard Tafel electrochemical techniques and ASTM-Corrosive Water D1384, the following corrosion test data has been compiled.

SILVABRITE 100 <sup>®</sup>	0.31 mils/year
50/50 Tin-Lead	0.63 mils/year
95/5 Tin-Antimony	2.2 mils/year



**PRODUCT: SILVABRITE 100<sup>®</sup> - CONTINUED**

SILVABRITE 100<sup>®</sup> is twice as corrosion resistant as 50/50 Tin-Lead and seven times as corrosion resistant as 95/5 Tin-Antimony.

With less corrosive water the difference between these solders will drastically increase.

**LIABILITY-DISCLAIMER:**

Wolverine Joining Technologies, LLC, seeks to represent reliable information concerning the composition, properties and use of its products. The technical information provided in this publication is provided at no charge and is without guarantee, warranty or responsibility of any kind, expressed or implied.

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3 of 3

# MATERIAL SAFETY DATA SHEET



4700 W. 160TH Street  
P.O. Box 35366  
Cleveland, Ohio 44135  
Emergency Tel No.  
(303) 623-5716 Collect

## OATEY RAIN-R-SHINE PVC CEMENT

Latest Revision Date...02/29/00

Date of Issue.....03/13/00

### SECTION 1

#### IDENTITY OF MATERIAL

TRADE NAME..... OATEY RAIN-R-SHINE PVC CEMENT  
PRODUCT NUMBERS... 30890, 30891, 30893, 30894, 30895, 30896  
FORMULA..... PVC Resin in Solvent Solution  
SYNONYMS..... PVC Plastic Pipe Cement

### SECTION 2

#### HAZARDOUS INGREDIENTS

INGREDIENTS	%	CAS NUMBER	SEC 313
PVC Resin (Non-Hazardous)	14-18%	9002-86-2	No
Tetrahydrofuran (See SECTION 6)	40-55%	109-99-9	No
Methyl Ethyl Ketone	24-31%	78-93-3	Yes
Cyclohexanone	7-12%	108-94-1	No
Amorphous Silica	1-3%	112945-52-5	No
Blue Colorant (Non-Hazardous)	1-3%	N/A	No

### SECTION 3

#### KNOWN HAZARDS UNDER 29 CFR 1910.1200

HAZARDS	YES	NO	HAZARDS	YES	NO
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			

### SECTION 4

#### REGULATION

CHEMICAL	TLV (TWA)	PEL	STEL	Hazard Action Level
Tetrahydrofuran	200 ppm, 590 mg/cu m	200 ppm, 590 mg/cu m	250 ppm, 735 mg/cu m	N/A
Methyl Ethyl Ketone	200 ppm, 590 mg/cu m	200 ppm, 590 mg/cu m	300 ppm, 865 mg/cu m	N/A
Cyclohexanone	25 ppm, 100 mg/cu m (skin)	50 ppm, 200 mg/cu m	N/A	N/A
Amorphous Silica	10 mg/cu m	20 mg/cu m	N/A	N/A

### SECTION 5

#### REGULATED IDENTIFICATION

DOT PROPER SHIPPING NAME..... CONSUMER COMMODITY ORN-D; For galloons: Adhesives, 3, UN1133, PGII  
DOT HAZARD CLASS..... Class 3 Flammable Liquid  
SHIPPING ID NUMBER..... UN1133 (Galloons Only)  
EPA HAZARDOUS WASTE ID NUMBER..... D-001  
EPA HAZARD WASTE CLASS..... Ignitable Waste/Toxic Waste

### SECTION 6

#### EFFECTS OF EXPOSURE

ENTRY ROUTE..... INHALE - YES INGEST - YES SKIN - YES EYE - YES  
INHALATION..... May cause irritation of mucous membranes, nose & throat, headache, dizziness, nausea, numbness of the extremities and narcosis in high concentrations. Has caused CNS depression & liver damage in animals, & high concentrations have caused retardation of fetal development in rats.  
TETRAHYDROFURAN WARNING..... 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. THF is not listed as a carcinogen by NTP, IARC, or OSHA. One THF vendor has recommended a reduction in the "acceptable exposure limit" from 200 ppm to 25 ppm, 8 and 12 hour time weighted average.  
SKIN..... Chronic contact may lead to irritation & dermatitis. Chronic exposure to vapors of high concentration may cause dermatitis. May possibly be absorbed through the skin.  
EYE..... Vapors or direct contact may cause irritation.  
INGESTION..... May be aspirated into the lungs or cause systemic effects described under inhalation.  
TARGET ORGANS... Eye, Skin, Kidney, Lungs, Liver, Central Nervous System

(Continued on next page)

**EMERGENCY AND FIRST AID PROCEDURES - 303/623-5716 COLLECT**

**SECTION 7**

Flush with water, then wash thoroughly with soap & water. Remove contaminated clothing & wash before re-use.  
 Call a poison control center or physician if an irritation persists.  
 If fumes cause irritation, move to fresh air and irrigate eyes with water for 15 minutes. If irritation persists, seek medical attention.  
 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.  
 Drink plenty of water. DO NOT INDUCE VOMITING, call a poison control center or physician immediately. Avoid alcoholic beverages. Never give anything by mouth to an unconscious person.

**PHYSICAL AND CHEMICAL PROPERTIES**

**SECTION 8**

HAZARD SIGNAL.....	HEALTH	2	STABILITY	3	FLAMMABILITY	3	SPECIAL	NONE
BOILING POINT.....	75 Degrees F							
MELTING POINT.....	N/A							
PRESSURE.....	145 mmHg @ 20 Degrees C							
DENSITY (AIR = 1).....	2.5							
LE COMPONENTS.....	82-80%							
SOLUBILITY IN WATER.....	Negligible							
.....	N/A							
RELATIVE DENSITY.....	0.94 +/- 0.02							
REFRACTIVE RATE.....	(20°C = 1) = 5.5 - 8.0							
COLOR.....	Blue Liquid							
ODOR.....	Ether-Like							
SOLUBLE IN.....	Tetrahydrofuran							
PHASE AT 25.....	Liquid							

**FIRE AND EXPLOSION HAZARD DATA**

**SECTION 9**

LEL 4.8      # Volume LEL = 11.8      % Volume  
 UEL 5 - 8 Degrees F. / PHCC  
 Stable CONDITIONS TO AVOID: Heat, sparks and open flame. HAZARDOUS DECOMP. PTS.:  
 Carbon monoxide/ carbon dioxide/hydrogen chloride/smoke.  
 POLYMERIZATION..... Will Not Occur, CONDITIONS TO AVOID: None  
 INCOMPATIBILITY/NAT. TO AVOID..... Acids, oxidizing materials, nitralis, chlorinated inorganics (potassium, calcium and sodium hypochlorite), copper or copper alloys.  
 FIRE FIGHTING PROCEDURE... FOR SMALL FIRES: Use dry chemical, CO2, water or foam extinguisher. FOR LARGE FIRES: Evacuate area and call Fire Department immediately.

**SPILL AND DISPOSAL INFORMATION**

**SECTION 10**

LEAK PROCEDURES... Ventilate area, stop leak if it can be done without risk. Take up with sand, earth, or other non-combustible absorbing material.  
 DISPOSAL... Dispose of according to local, state, and Federal regulations.

**SAFE USAGE DATA**

**SECTION 11**

EQUIPMENT TYPES... EYES: Safety glasses with side shields. RESPIRATORY: NIOSH-approved canister respirator in absence of adequate ventilation. GLOVES: Rubber Gloves OTHER: Eye wash and safety shower should be available.  
 LOCAL EXHAUST... Open doors & windows. Exhaust ventilation capable of maintaining emissions at the point of below PEL. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in that explosive concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.  
 HANDLING & STORAGE... Keep away from heat, sparks and flames; store in cool, dry place. OTHER: Containers, even empties will retain residue and vapors.

**MANUFACTURER OR SUPPLIER DATA**

**SECTION 12**

NAME & MAILING ADDRESS... DATEY CO., 4700 West 160th Street, P.O. Box 35906 Cleveland, Ohio 44135  
 PHONE NUMBER... (216) 267-7100  
 TOLL FREE PHONE NUMBER... For Emergency First Aid call 1-800-424-9500  
 ONLY, call Chemtrec at 1-800-424-9500

**SECTION 13**

Information herein has been compiled from sources believed to be reliable. No liability is assumed by the manufacturer for any damage or injury resulting from the use of this information, and is accurate as the best of our knowledge. Only contact the manufacturer regarding information from other sources, and a liability will be assumed for any damage or injury resulting from the use of this information.

# OATEY RAIN-R-SHINE PVC CEMENT

## EMERGENCY AND FIRST AID PROCEDURES - 303/623-5716 COLLECT

### SECTION 7

- Flush with water, then wash thoroughly with soap & water. Remove contaminated clothing & wash before re-use.  
Call a poison control center or physician if an irritation persists.  
If fumes cause irritation, move to fresh air and irrigate eyes with water for 15 minutes. If irritation persists, seek medical attention.  
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.  
Drink plenty of water. DO NOT INDUCE VOMITING, call a poison control center or physician immediately. Avoid alcoholic beverages. Never give anything by mouth to an unconscious person.

## PHYSICAL AND CHEMICAL PROPERTIES

### SECTION 8

HAZARD SIGNAL	HEALTH	2	STABILITY	1	FLAMMABILITY	3	SPECIAL	NONE
BOILING POINT	152 Degrees F							66 C
MELTING POINT	N/A							
VAPOR PRESSURE	145 mmHg @ 20 Degrees C							
DENSITY (AIR = 1)	2.5							
VALENT COMPONENTS	82-86%							
SOLUBILITY IN WATER	Negligible							
REFRACTIVE INDEX	N/A							
RELATIVE DENSITY	0.94 +/- 0.02							
EVAPORATION RATE	(BUAC = 1) = 5.5 - 8.0							
COLOR AND ODOR	Blue Liquid							
SMELL	Ether-Like							
SOLUBLE IN	Tetrahydrofuran							
PHASE AT 20 C	Liquid							

## FIRE AND EXPLOSION HAZARD DATA

### SECTION 9

- FLASH POINT: 161 - 168 °C Volume OEL = 11.8 % Volume  
EXTINGUISHING METHOD USED: 5 - 8 Degrees F. / PNEC  
HAZARDOUS DECOMP. POTS.: Stable  
CONDITIONS TO AVOID: Heat, sparks and open flame. CARBON MONOXIDE/ CARBON DIOXIDE/HYDROGEN CHLORIDE/SMOKE.  
POLYMERIZATION: Will Not Occur, CONDITIONS TO AVOID: None  
ACID/ALKALI/TOXICITY: Acids, oxidizing materials, alkalis, chlorinated inorganics (potassium, calcium and sodium hypochlorite), copper or copper alloys.  
FIRE FIGHTING PROCEDURE: FOR SMALL FIRES: Use dry chemical, CO2, water or foam extinguisher. FOR LARGE FIRES: Evacuate area and call Fire Department immediately.

### SECTION 10

## SPILL AND DISPOSAL INFORMATION

- LEAK PROCEDURES: Ventilate area, stop leak if it can be done without risk. Take up with sand, earth, or other non-combustible absorbing material.  
DISPOSAL: Dispose of according to local, state, and Federal regulations.

### SECTION 11

## SAFE USAGE DATA

- EQUIPMENT TYPES: EYES: Safety glasses with side shields. RESPIRATORY: NIOSH-approved canister respirator in absence of adequate ventilation. GLOVES: Rubber Gloves OTHER: Eye wash and safety shower should be available.  
LOCAL EXHAUST: Open doors & windows. Exhaust ventilation capable of maintaining emissions at the point of use below PEL. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in that explosive concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.  
HANDLING & STORAGE: Keep away from heat, sparks and flames; store in cool, dry place. OTHER: Containers, even empties will retain residue and vapors.

### SECTION 12

## MANUFACTURER OR SUPPLIER DATA

- NAME & MAILING ADDRESS: OATEY CO., 4700 West 160th Street, P.O. Box 35906 Cleveland, Ohio 44135  
PHONE NUMBER: (216) 267-7100  
TOLL FREE PHONE NUMBER: For Emergency First Aid call (800) 424-9300  
ONLY, call Chemrec at 1-800-424-9300

### SECTION 13

Information herein has been compiled from sources believed to be reliable. Oatey Co. does not warrant the accuracy of the information herein and is not responsible for any damages or liabilities resulting from the use of this information. Oatey Co. does not assume any liability for the use of this information.

**MATERIAL SAFETY DATA SHEET- RectorSeal® NO. 5®**

MSDS0011  
Ver. No.2

Ver. Date March 25, 2002

**HMS RATINGS** Health: 1 Fire: 2 Reactivity: 0 Personal Protection Index: B

**SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME: RectorSeal® No. 5®  
PRODUCT CODES: 25790, 25631, 25551, 25431, 25300, 25271, 25191, 25112  
CHEMICAL FAMILY: Organic  
USE: Pipe Thread Sealant  
MANUFACTURER / SUPPLIER  
RectorSeal  
2601 Sperwick Drive  
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NUMBERS:  
Chemtrec 24 hours: (800) 424-9300  
RectorSeal: (713) 263-8001

NON-EMERGENCY TELEPHONE NUMBERS:  
Technical Service: (800) 231-3345

**SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS**

HAZARDOUS COMPONENTS	CAS NO.	WT%	OSHA PEL	ACGIH TLV	OTHER LIMITS
Diacetone Alcohol	123-42-2	20-30	50 ppm	50 ppm	ND

**SECTION 3 HAZARDS IDENTIFICATION**

SUMMARY OF ACUTE HAZARDS: Irritation to eyes, nose and throat; dermatoses, necrosis, tremors and other CNS effects of high concentration.

ROUTE OF EXPOSURE	SIGNS AND SYMPTOMS	PRIMARY ROUTES:
INHALATION:	Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.	Yes
EYE CONTACT:	Watering, blurred vision, inflammation and irritation which can result in corneal injury.	Yes
SKIN CONTACT:	Irritation, dermatitis.	Yes
INGESTION:	Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.	No

SUMMARY OF CHRONIC HAZARDS: Skin irritation, dermatitis and debility. Possible liver and kidney damage.  
MEDICAL CONDITIONS GENERALLY 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**

INHALATION: 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.

EYE CONTACT: Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.

SKIN CONTACT: Wash with soap and water. Remove contaminated clothing. 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: 150°F (65°C) SETA CC FLAMMABILITY LIMITS: LFL: N/D UFL: 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 icing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and sea. Wear protective clothing and respiratory protection during cleanup.

**SECTION 7 STORAGE AND HANDLING**

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: 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  
 MECHANICAL (GENERAL): Preferable  
 PROTECTIVE GLOVES: Wear non-permeable gloves.  
 OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.  
 WORKHYGIENE 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.  
 SPECIAL: Explosion-proof equipment.  
 OTHER: N/A  
 EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

BOILING POINT: 322°F (161°C) @ 760mm Hg  
 VAPOR PRESSURE (mm Hg): 0.3 @ 65°F (20°C)  
 VAPOR DENSITY (AIR = 1): 1.1  
 SOLUBILITY IN WATER: 23%  
 SPECIFIC GRAVITY (H<sub>2</sub>O = 1): 1.28  
 MELTING POINT: N/A  
 EVAPORATION RATE (ETHYL ACETATE = 1): 0.14  
 APPEARANCE/ODOR: Yellow Pastel/No Odor

**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, CO<sub>2</sub>, and fragmented hydrocarbons.  
 HAZARDOUS POLYMERIZATION: Will not occur.

**SECTION 11 TOXICOLOGY INFORMATION**

CARCINOGENICITY: NTP: No IARC MONOGRAPHS: No OSHA REGULATED: No

SUBSTANCE: Diacetone Alcohol  
 LD50: Oral-Rat LD50:4000 mg/kg  
 LC50: Inhalation-Human TCl:100 ppm

**SECTION 12 ECOLOGICAL INFORMATION**

FOOD CHAIN  
 SUBSTANCE: Diacetone Alcohol  
 CON POTENTIAL: N/A  
 WATERFOWL TOXICITY: N/A  
 BOD: N/A  
 AQUATIC TOXICITY: N/A

**SECTION 13 DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL METHOD: Dispose of clean up materials and liquid waste in accordance with all local, state and federal regulations.

**SECTION 14 TRANSPORTATION INFORMATION**

DOT: Non-Regulated  
 ICAO/IATA: Non-Regulated  
 AIR (IATA): Non-Regulated  
 WHMIS (CANADA): Non-Regulated

**SECTION 15 REGULATORY INFORMATION**

SUBSTANCE: Diacetone Alcohol  
 SARA 313: No  
 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, express or implied is made. Consult ReactorSeal for further information: (713) 263-0001



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71665: Teflon Tape 1/2  
 71699: Teflon Tape 3/4  
 72710: Teflon Tape 1/4  
 MSDS Last updated: 11/25/2003

**PRODUCT SEARCH**

\*\*\* SECTION I, IDENTIFICATION\*\*\*

**GO**

Advanced Search

- All Products
- Fasteners
  - » Grade 8
  - » Grade 5
  - » Threaded Fasteners
- Hardware
- Rivet & Rivet Guns
- Vehicle Lighting
- Electrical Products
- Tubing & Tube Fittings
- Air Brake Products
- Hose & Hose Ends
- Cutting Tools
- Abrasives
- Safety Products & Welding Supplies
- Chemicals & Paint
  - » MSDS Information
  - » CA/OTC Information
- Shop Supplies
- Vehicle Parts & Accessories
- Assortments & Steel Equipment
  - » Assortment Listing
- Online Catalog Index
- Discontinued & Overstock Specials

PRODUCT NAME: TEFLONE TAPE  
 IMPERIAL PART NUMBER: 71665, 71699, and 72710  
 MANUFACTURES NAME: AA THREAD SEAL TAPE, INC  
 MANUFACTURES ADDRESS: 1275 KYLE CT  
 CITY/STATE/ZIP: WAUCONDA, IL 60084  
 PHONE NUMBER: 847-526-2120  
 DATE PREPARED: 2/14/00  
 DATE UPDATED: 1/18/02  
 DISTRIBUTORS NAME: Imperial Supplies LLC  
 DISTRIBUTORS ADDRESS: 789 PACKER DR  
 CITY/STATE/ZIP: GREEN BAY, WI 54307  
 PHONE NUMBER: 800-558-2808  
 EMERGENCY CONTACT NUMBER: 800-255-3924 (CHEM-TEL)

\*\*\* SECTION II, HAZARDOUS INGREDIENTS/IDENTITY\*\*\*

HAZARDOUS COMPONENTS	OSHA PEL	ACGIH TLV	OTHER EXPOSURE LIMITS	%	CAS. NO.
POLYTETRAFLUOROETHYLENE	N/A	N/A		100%	9002-84-1

PTFE TAPE, AS SUCH IS NOT A HAZARDOUS MATERIAL, IT IS A PROCESSED SOLID POLYMER. TEMPERATURE RANGE -450 DEGREES F TO +500 DEGREES F

\*\*\* SECTION III, PHYSICAL & CHEMICAL CHARACTERISTICS\*\*\*

BOILING POINT: N/A  
 SPECIFIC GRAVITY: 2.1-2.2  
 VAPOR PRESSURE: N/A  
 VAPOR DENSITY: N/A  
 SOLUBILITY IN WATER: INSOLUBLE  
 REACTIVITY IN WATER: NONE

Printer-Friendly View

APPEARANCE IN ODOR: WHITE  
 MELTING POINT: 341 DEGREES C (642 DEGREES F)

\*\*\* SECTION IV. FIRE & EXPLOSION DATA \*\*\*

FLASH POINT: N/A  
 METHOD USED: ----  
 FLAMMABLE LIMITS IN AIR  
 & BY VOLUME: LEL LOWER - N/A UEL UPPER - N/A  
 AUTO IGNITION TEMPERATURE: N/A  
 EXTINGUISHER MEDIA: N/A USE MEDIA SUITABLE FOR SURROUNDING FIRE  
 SPECIAL FIRE FIGHTING  
 PROCEDURES: SELF CONTAINED BREATHING APPARATUS WITH FULL  
 FACE PIECE AND PROTECTIVE CLOTHING IF INVOLVED W/  
 OTHER MATERIALS  
 UNUSUAL FIRE AND  
 EXPLOSION HAZARDS: PRODUCT WILL EMIT TOXIC FUMES AT HIGH  
 TEMPERATURES  
 ABOVE 800 DEGREES F - TETRAFLUOROETHYLENE  
 ABOVE 825 DEGREES F - HEXAFLUROETHYLENE  
 ABOVE 885 DEGREES F - PERFLUROOISBUTYLENE  
 ABOVE 930 DEGREES F - CARBONYL FLUORIDE

\*\*\* SECTION V, PHYSICAL HAZARDS (REACTIVITY DATA) \*\*\*

STABILITY: STABLE  
 CONDITIONS TO AVOID: HEATING ABOVE 750 DEGREES F FOR A PRELONGED PER:  
 INCOMPATABILITY MATERIAL  
 TO AVOID: MOLTEN ALKALI METALS: INTERHALOGEN COMPOUNDS  
 HAZARDOUS DECOMPOSITION  
 PRODUCTS: SEE SECTION IV  
 HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

\*\*\* SECTION VI, HEALTH HAZARDS \*\*\*

ACUTE: FLU LIKE TRANSIENT SICKNESS  
 CHRONIC: COULD BE FATAL  
 SIGNS AND SYMPTOMES  
 OF EXPOSURE: FLU LIKE FEVER  
 MEDICAL CONDITIONS  
 GENERALLY AGGRAVATED BY  
 EXPOSURE: RESPIRATORY INFLAMMATION  
 CHEMICAL LISTED AS  
 CARCINOGEN OR POTENTIAL  
 CARCINOGEN: NATIONAL TOXICOLOGY PROGRAM - NO  
 IARC MONOGRAPHS - NO  
 OSHA - NO  
 EMERGENCY AND FIRST  
 AID PROCEDURES: MOVE TO FRESH AIR. REFER TO PHYSICIAN

ROUTES OF ENTRY:                    INHALATION - NO TOXIC EFFECT FROM DUST  
    EYES - MECHANICAL IRRITATION  
    SKIN - PROBABLY NON-IRRITATING AND NON-ABSORBING  
    INGESTION - PTFE HAS BEEN SHOWN TO BE INERT WHEN  
    INGESTED BY RATS

\*\*\* SECTION VII, SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES \*\*\*

PRECAUTIONS TO BE TAKEN  
 IN HANDLING AND STORAGE:        NO UNUSUAL PRECAUTIONS

OTHER PRECAUTIONS:                NONE

STEPS TO BE TAKEN IN  
 CASE MATERIAL IS RELEASED  
 OR SPILLED:                         SWEEP UP TO PREVENT SLIPPAGE ON TAPE

WASTE DISPOSAL METHODS:        CONFORMING TO ALL APPLICATION REGULATIONS

\*\*\* SECTION VIII, SPECIAL PROTECTION INFORMATIONS/CONTROL MEASURES \*\*\*

RESPIRATORY PROTECTION:        N/A - EXCEPT AS IN SECTION IV

VENTILATION:                        N/A

LOCAL EXHAUST:                    N/A

MECHANICAL:                        N/A

SPECIAL:                             N/A

OTHER:                                N/A

PROTECTIVE GLOVES:                N/A

EYE PROTECTION:                  N/A

OTHER PROTECTIVE CLOTHING  
 OR EQUIPMENT:                      N/A

WORK HYGIENIC PRACTICES:        NO SMOKING WHILE HANDLING MATERIAL

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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)

**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 Information**

Supplier's Name <b>Bernz-O-matic</b>	Emergency Telephone Number <b>585-798-4949</b>
Address <i>Number, Street, City, State and ZIP Code</i>  <b>One BernzOmatic Drive Medina, NY 14103</b>	Telephone Number for Information <b>585-798-4949</b>
	Date Prepared <b>November 10, 2005</b>
	Signature of Preparer (Optional)

**SECTION II - Hazardous Ingredients/Identifying Information**

Hazardous Components <i>Specific Chemical Identity, Common Name(s)</i>	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Liquefied Petroleum Gas w/ Methylacetylene	N/A	N/A	N/A	56.0
Liquefied Petroleum Gas CAS NO. 68476-85-7	1000PPM			
Methyl Acetylene-Propadiene CAS NO. 56960-91-9	1000PPM			44.0
NFPA HAZARD RATINGS Health -2 Flammability -4 Reactivity -2	HMIS RATINGS Health -0 Flammability -4 Reactivity -2			

Notes

**SECTION III - Physical/Chemical Characteristics**

Boiling Point <b>-54° F to -10° F</b>	Specific Gravity (H <sub>2</sub> O = 1) <b>0.571</b>
Vapor Pressure (mm Hg) <b>@ 70° F 97 psig</b>	Melting Point <b>N/A</b>
Vapor Density (AIR=1) <b>1.48</b>	Evaporation Rate Butyl Acetate -1) <b>N/A</b>
Solubility in Water <b>Slight</b>	
Appearance and Odor <b>Colorless - unpleasant odor at approx. 100ppm</b>	

**SECTION IV - Fire and Explosion Hazard Data**

Flash Point (Method Used) <b>Closed Cup -156° F</b>	Flammable Limits In air by volume	LEL <b>3.0</b>	UEL <b>11.0</b>
Extinguishing Media <b>Eliminate oxygen source or stop flow of gas. Use water to cool cylinder. Dry chemical or CO<sub>2</sub> to reduce oxygen.</b>			
Special Fire Fighting Procedures <b>Cool cylinders with water. Keep personnel away.</b>			

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 → <b>Unstable</b> <b>Stable X</b>	Conditions to Avoid <b>Do not expose to temperatures above 125° F.</b>
Incompatibility (Materials to Avoid)	<b>Extremely flammable. Avoid uncontrolled contact with oxidizers.</b>
Hazardous Decomposition or Byproducts	<b>None</b>
Hazardous Polymerization → <b>May Occur</b> <b>Will Not Occur X</b>	Conditions to Avoid <b>N/A</b>

**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 to 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 <b>Methyl Acetylene and Propadiene Mixtures, Stabilized</b>	Hazard Classification <b>Flammable Gas</b>	UN. No. <b>1060</b>

**Section 5 - Reactivity Data**

Stability: Stable                      Conditions To Avoid: None  
Incompatibility                      Strong oxidizers  
(Materials To Avoid):  
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**  
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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.

## MECHANICAL PAGE INDEX

<b>19-20</b>	<b>PROSEAL/FIBERSEAL CAULKING</b>
<b>21-27</b>	<b>JM FIBER GLASS WOOL INSULATION</b>
<b>28-29</b>	<b>DURO DYNE WATER BASED ADHESIVE</b>
<b>30-34</b>	<b>JIM PR-1 OR CLEAR PR-2</b>
<b>35-36</b>	<b>ULTRA FLUX SILVER BRAZING FLUX</b>
<b>37-38</b>	<b>SLIVALOY 15</b>
<b>39-44</b>	<b>ACETYLENE</b>
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<b>48-51</b>	<b>TRUZINC STEEL</b>

# MATERIAL SAFETY DATA SHEET

ISSUE DATE: 1/7/98

REVISED DATE: 8/08/06

Supersedes: Any previous M.S.D.S. on this product

EMERGENCY TELEPHONE NUMBER: CHEM-TEL, INC 1-800-255-3924

## I. IDENTIFICATION

**PRODUCT NAME: Proseal/Fiberseal**  
**PRODUCT CLASS:** Water Based Duct Sealant (Caulking)

DUCTMATE INDUSTRIES, INC.  
1502 Industrial Drive  
Monongahela, PA 15063

## II. HAZARDOUS INGREDIENTS

### REPORTING REQUIREMENTS:

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class.....None

EPA SARA Title III Section 312 (40CFR370) hazard class.....None

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are....None

CALIFORNIA PROP 65 substances listed by the State of California under the "Safe Drinking Water and Toxic Enforcement Act of 1986".  
No such substances are present in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

## III. PHYSICAL DATA

**APPEARANCE:** Gray caulking

**SOLUBILITY IN WATER:** Dilutable

**BOILING POINT:** 100°C / 212°F

**WEIGHT PER GALLON:** 14.2 lbs/gallon

**VOLATILE BY WEIGHT:** 34%± 2% (Water)

**VAPOR DENSITY:** Heavier than Air.

**EVAPORATION RATE:** (BAC = 1) Less than 1

**ODOR:** Mild

**PHYSICAL STATE:** Paste

**Ph:** 8 to 9.5

**VOC CONTENT:** 0

## IV. HEALTH HAZARD DATA

**CAUTION:** May cause discomfort in eyes. Prolonged or repeated contact with skin may cause dryness.

**IN EYES:** Flush with water for 15 minutes.

**ON SKIN:** Wash with soap and water.

**INGESTED:** Seek medical attention.

**INHALATION:** No effects expected. If difficulty breathing occurs remove to fresh air and consult physician.

## V. EMERGENCY AND FIRST AID

**FLAMMABILITY CLASS (OSHA/NFPA):** None.

**FLASHPOINT:** >212°F PM Closed cup

**EXTINGUISHING MEDIA:** Water or dry type extinguisher.

**UNUSUAL FIRE HAZARD:** Containers may burst when exposed to extreme heat.

**FIRE FIGHTING PROCEDURES:** Firemen should wear equipment to protect against noxious fumes. Self contained breathing apparatus may be needed

**PRODUCT OF COMBUSTION:** May yield Carbon Monoxide and/or Carbon Dioxide.

## VI. SPILL OR LEAK PROCEDURES

Collect spilled material in salvage container. Small amounts may be absorbed into appropriate absorbents. Prevent spill from entering sewers, drains, and waterways.

Dispose of product in accordance with applicable local, state, and federal regulations.

## VII. SPECIAL PROTECTION

**VENTILATION:** Provide sufficient ventilation to maintain constant fresh air in workplace.

**EYE PROTECTION:** Use safety goggles when splash potential exists.

**HAND PROTECTION:** Protective impervious gloves are recommended.

**OTHER:** A clean source of water should be available for washing eyes and skin.

## VIII. REGULATORY INFORMATION

Non-flammable, as a Latex compound

U.S.A.: Regulation by the following: DOT, IMO, ICAD/IATA: None

Canada: Regulation by the following: DSL, WHMIS: None

European: EEC SYMBOL: None

EEC Classification, Packaging and Labeling of Dangerous Substances: None

TSCA 12(b) Export Notification Requirement: All components of this product are either listed on the U.S. Toxic Substances Control Act (TSCA) inventory of chemicals or are otherwise compliant with TSCA regulations.

## IX. REACTIVITY DATA

**STABILITY:** Stable under normal conditions of handling and use.

**INCOMPATIBILITY:** Products may react violently with products that react with water.

**HAZARDOUS DECOMPOSITION:** Fumes produced when heated to decomposition may include: oxides of carbon, nitrogen, and sulfur along with hydrocarbon residues.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## X. SPECIAL PRECAUTIONS

**HANDLING AND STORAGE:** Store in tightly closed containers at temperatures 45 F to 90 F. . Guard against inhalation of excess vapors, ingestion, and contact with skin and eyes. Change soiled workclothes frequently. Clean hands after handling. Precautions also apply to emptied containers. Keep containers away from extreme heat and cold. Prevent from freezing, but if product is allowed to freeze, thaw completely before use.

**DISPOSAL:** Allow residual material in pails to cure before disposal. Most areas allow for the disposal of cured material with regular trash. Check local regulations before disposing of any product.

This information is taken from sources or based upon data believed to be reliable; however, DUCTMATE INDUSTRIES, INC. 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. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist, as all materials may present unknown health hazards.

**Section 1 - Chemical Product and Company Identification**

**Product Name** Fiber Glass Wool Insulation  
**CAS#** Not applicable  
**Generic Name** Fiber Glass Wool Product  
**Formula** Not available  
**Chemical Name:** Mixture  
**Hazard Label** FGW-01 or FGW-01-HT or FGW-01-1009 or L1009

**Manufacturer Information**

Johns Manville  
 Performance Materials Division  
 P.O. Box 5108  
 Denver, CO 80127 USA

Telephone: 303-978-2000 8:00AM-5:00PM M-F  
 Internet Address: <http://www.jm.com>  
 Emergency: 800-424-9300 (Chemtrec, In English)

**Trade Names:**

800 Series Spin-Glas® Board Insulations;  
 1000 Series Spin Glas® Board;  
 Blended Blowing Wool;  
 Fabrication Board;  
 Grooved Duct Board;  
 Hullboard (Incombustible);  
 Hullinsul® Fiber Glass Board;  
 Incombustible Microlite®;  
 Insul-SHIELD® Coated Black;  
 Linacoustic® RC;  
 Mat-Faced Micro-Aire® Duct Board;  
 Micro-Flex™ Large Diameter Pipe and Tank Wrap;

Micro-Lok® HP;  
 Micro-Lok® Pipe Insulation;  
 Permacote® Linacoustic® (Types: Standard, HP, and R-300);  
 Precipitator Spin Glas®;  
 R series Microlite® (plain, FSK, PSK, & vinyl faced);  
 Spiracoustic™;  
 Spin Glas® HTB 26 & 23;  
 Spirocoustic Plus™;  
 SuperDuct™ Boards;  
 SuperDuct™ RC Boards;  
 Zeston Hi-Lo Temp® Insulation Inserts.

**Section 2 - Composition / Information on Ingredients**

CAS #	Component	Percent
65997-17-3	Continuous Filament Glass Fiber	1-10**
65997-17-3	Fiber Glass Wool	50-98
Not Available	Non-woven, AP, FSK, PSK, or vinyl facings; or vinyl, acrylic, or latex coatings	0-40
Not Available	Urea extended phenol-melamine formaldehyde binder (cured)	2-18*
Not Available	Urea extended phenol-formaldehyde binder (cured)	2-18*
Not Available	Acrylic Coating (present in Mat-Faced Micro-Aire Duct Board only)	0-10
25038-59-9	Polyester fiber (present in black products only)	1-10
Not Available	Methylene Diurea	<1
25637-99-4	Cyclododecane, hexabromo- (present in Spiracoustic only)	<1
1333-86-4	Carbon black (present in black products only)	<1
1309-64-4	Antimony trioxide	0.1-3***

**Additional Component Information**

\* Binder may be either of these.

\*\* Component scrim facings

\*\*\* Note: Antimony trioxide (fire retardant) may be present in the facings and/or adhesives. Occupational exposure to airborne antimony trioxide is not expected to occur due to product form(s) and intended use(s). Exposure limit is given for reference only.

**Section 3 - Hazards Identification**

**Emergency Overview**

**APPEARANCE AND ODOR:** Gold, yellow, or black fibrous glass blanket, board, or formed shape with or without facings. No significant odor.

Inhalation of excessive amounts of dust from the product may cause temporary upper respiratory irritation and/or congestion--remove individual to fresh air.

**Potential Health Effects**

**Summary**

Breathing dust from this product may cause a scratchy throat, congestion, and slight coughing. Getting dust or fibers on the skin, or in the eyes may cause itching, rash, or redness. Additional health and safety information is provided in Section 11 of this material safety data sheet.

In high temperature applications, treatment, curing, or in geographic areas of high heat and humidity, this product may release gases irritating to the eyes, nose and throat. In confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycles.

**Inhalation**

Irritation of the upper respiratory tract, coughing, and congestion may occur in extreme exposures. Severe irritation of the mouth, nose, and throat, as well as signs of central nervous system depression (drowsiness, dizziness, headache), may occur upon inhalation of vapors or gases.

**Skin**

Temporary irritation (itching) or redness may occur.

**Ingestion**

This product is not intended to be ingested (eaten). If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

**Eyes**

Temporary irritation (itching) or redness may occur.

**Ears**

Temporary irritation (itching) or redness may occur.

**Primary Routes of Entry (Exposure)**

Inhalation (breathing dust, fibers, or vapors), skin, and eye contact.

**Target Organs**

Nose (nasal passages), throat, lungs, skin, eyes.

**Medical Conditions Aggravated by Exposure**

Pre-existing chronic respiratory, skin, or eye diseases or conditions.

**Section 4 - First Aid Measures**

**First Aid: Inhalation**

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

**First Aid: Skin**

Wash gently with soap and warm water to remove dust. Wash hands before eating or using the restroom.

**First Aid: Ingestion**

Product is not intended to be ingested or eaten. If this product is ingested, irritation of the gastrointestinal (GI) tract may occur, and should be treated symptomatically. Rinse mouth with water to remove fibers, and drink plenty of water to help reduce the irritation. No chronic effects are expected following ingestion.

**First Aid: Eyes**

Do not rub or scratch your eyes. Dust particles may cause the eye to be scratched. Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a medical professional.

**First Aid: Ears**

Wash exposed skin with soap and water. If irritation develops in the inner ear, seek medical attention.

**First Aid: Notes to Physician**

Irritating gases may be released under conditions of high heat or humidity. At high levels, these could cause severe upper respiratory and eye irritation. Formaldehyde gas is a skin and respiratory sensitizer. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

**Section 5 - Fire Fighting Measures**

**Flash Point:** Not applicable  
**Upper Flammable Limit (UFL):** Not applicable  
**Auto Ignition:** Not determined  
**Rate of Burning:** Not determined

**Method Used:** Not applicable  
**Lower Flammable Limit (LFL):** Not applicable  
**Flammability Classification:** Not determined

**General Fire Hazards**

There is no potential for spontaneous fire or explosion.

**Extinguishing Media**

Carbon dioxide (CO<sub>2</sub>), water, water fog, dry chemical.

**Fire Fighting Equipment/Instructions**

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

**Section 6 - Accidental Release Measures**

**Containment Procedures**

Pick up large pieces. Vacuum dusts. If sweeping is necessary, use a dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean-up. These procedures will help to minimize potential exposures.

**Clean-Up Procedures**

Avoid the generation of dusts during clean-up.

**Section 7 - Handling and Storage**

**Handling Procedures**

Use protective equipment as described in Section 8 of this material safety data sheet when handling uncontained material.

**Storage Procedures**

Warehouse storage should be in accordance with package directions, if any. Material should be kept dry, and protected from moisture.

**Section 8 - Exposure Controls / Personal Protection**

**Exposure Guidelines**

**A: General Product Information**

Glass wool fiber, OSHA voluntary Health and Safety Partnership Program (HSPP): 1 f/cc TWA for fibers longer than 5 µm with a diameter less than 3 µm.

**B: Component Exposure Limits**

**Fiber Glass Wool (65997-17-3)**

ACGIH: 1 fiber/cm<sup>3</sup> TWA (respirable fibers, length >5 µm, aspect ratio ≥3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination); 5 mg/m<sup>3</sup> TWA (inhalable fraction)

**Fiber Glass Wool (65997-17-3)**

ACGIH: 1 fiber/cm<sup>3</sup> TWA (respirable fibers, length >5 µm, aspect ratio ≥3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination)

**Carbon black (present in black products only) (1333-86-4)**

ACGIH: 3.5 mg/m<sup>3</sup> TWA  
OSHA: 3.5 mg/m<sup>3</sup> TWA

**PERSONAL PROTECTIVE EQUIPMENT**

**Personal Protective Equipment: Eyes/Face**

Safety goggles are recommended to keep dust, fibers, gases, and vapors out of the eyes.

**Personal Protective Equipment: Ears**

Use ear protection (earplugs, hood, or earmuffs) to prevent airborne dust or fibers from entering the ear, if necessary.

**Personal Protective Equipment: Skin**

Leather or cotton gloves should be worn to prevent skin contact and irritation. Barrier creams may also be used to reduce skin contact and irritation caused by fiber glass.

**Personal Protective Equipment: Respiratory**

A respirator should be used if ventilation is unavailable, or is inadequate for keeping dust and fiber levels below the applicable exposure limits. In those cases, use a NIOSH-certified disposable or reusable particulate respirator with an efficiency rating of N95 or higher (under 42 CFR 84) when working with this product. For exposures up to five times the established exposure limits use a quarter-mask respirator, rated N95 or higher; and for exposures up to ten times the established exposure limits use a half-mask respirator (e.g., MSA's DM-11, Racal's Delta N95, 3M's 8210), rated N95 or higher. Operations such as sawing, blowing, tear out, and spraying may generate airborne fiber concentrations requiring a higher level of respiratory protection. For exposures up to 50 times the established exposure limits use a full-face respirator, rated N99 or higher.

**Ventilation**

In fixed manufacturing settings, local exhaust ventilation should be provided at areas of cutting to remove airborne dust and fibers. General dilution ventilation should be provided as necessary to keep airborne dust and fibers below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

**Personal Protective Equipment: General**

Wear a cap, a loose-fitting, long-sleeved shirt and long pants to protect skin from irritation. Exposed skin areas should be washed with soap and warm water after handling or working with fiber glass. Clothing should be washed separately from other clothes, and the washer should be rinsed thoroughly (run empty for a complete wash cycle). This will reduce the chances of fiber glass being transferred to other clothing.

**Section 9 - Physical & Chemical Properties**

<p><b>Appearance:</b> Gold, yellow, or black fibrous glass blanket, board, or formed shapes, with or without facings.</p> <p><b>Physical State:</b> Solid</p> <p><b>Vapor Pressure:</b> Not applicable</p> <p><b>Boiling Point:</b> Not applicable</p> <p><b>Solubility (H<sub>2</sub>O):</b> Nil</p> <p><b>Percent Volatile:</b> No data</p>	<p><b>Odor:</b> Mild formaldehyde</p> <p><b>pH:</b> Not applicable</p> <p><b>Vapor Density:</b> Not applicable</p> <p><b>Melting Point:</b> &gt;704°C/1300°F</p> <p><b>Specific Gravity:</b> Variable</p> <p><b>VOC:</b> Not applicable</p>
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**Section 10 - Chemical Stability & Reactivity Information**

**Chemical Stability**

This is a stable material.

**Hazardous Decomposition**

The decomposition products from this material are those that would be expected from any organic (carbon-containing) material, and are mainly derived from pyrolysis, or burning, of the resin. These decomposition products may include carbon monoxide, carbon dioxide, and carbon particles. Formaldehyde gas may also be released during decomposition.

**Hazardous Polymerization**

Will not occur.

**Section 11 - Toxicological Information**

**Acute Toxicity**

**A: General Product Information**

Dust from this product is a mechanical irritant, which means that it may cause temporary irritation or scratchiness of the throat, and/or itching of the eyes and skin.

Gases released under conditions of high heat and humidity can cause severe eye and respiratory irritation.

**B: Component Analysis - LD50/LC50**

**Cyclododecane, hexabromo- (present in Spiracoustic only) (25637-99-4)**

Inhalation LC50 Rat: >200 mg/L/1H; Oral LD50 Rat: >10000 mg/kg; Dermal LD50 Rabbit: >8000 mg/kg

**Carbon black (present in black products only) (1333-86-4)**

Oral LD50 Rat: >15400 mg/kg; Dermal LD50 Rabbit: >3 g/kg

**Antimony trioxide (1309-64-4)**

Oral LD50 Rat: >34600 mg/kg

**Carcinogenicity**

**A: General Product Information**

No additional information available.

**B: Component Carcinogenicity**

**Fiber Glass Wool (65997-17-3)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen  
IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

**Fiber Glass Wool (65997-17-3)**

ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans  
NTP: Reasonably Anticipated To Be A Carcinogen (respirable size)  
IARC: Group 3 - Not Classifiable (IARC Monograph 81 [2002] (listed under Man-made mineral fibres), Monograph 43 [1988])

**Carbon black (present in black products only) (1333-86-4)**

ACGIH: A4 - Not Classifiable as a Human Carcinogen  
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 93 posted, Monograph 65 [1996])

**Antimony trioxide (1309-64-4)**

ACGIH: A2 - Suspected Human Carcinogen (production)  
IARC: Group 2B - Possibly Carcinogenic to Humans (IARC Monograph 47 [1989])

**Chronic Toxicity**

Exposure to formaldehyde gas (in high temperature applications, treatment, curing, or in geographic areas of high heat and humidity) may cause eye and upper respiratory irritation, and possible respiratory or skin sensitization (allergy). If sensitization occurs, subsequent exposures to formaldehyde may worsen asthma or other respiratory problems, and cause allergic-type reactions.

Exposure to formaldehyde gas has been associated with the development of nasopharyngeal cancer in laboratory animals and humans. Formaldehyde has been classified as a known human carcinogen, Group 1, by the International Agency for Research on Cancer (IARC). The US Occupational Safety and Health Administration (OSHA) and the US National Toxicology Program (NTP) consider formaldehyde to have carcinogenic potential. OSHA specifically regulates formaldehyde under 29 CFR 1910.1048.

Fiber Glass Wool: In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The 2001 decision was based on current human and animal research that shows no association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease. This is a reversal of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of fiber glass. NTP and ACGIH have not yet reviewed the IARC reclassification or the most current fiber glass health research; at this time, both agencies continue to classify glass wool based on the earlier animal injection studies.

**Section 12 - Ecological Information**

**Ecotoxicity**

**A: General Product Information**

No data available for this product.

**B: Component Analysis - Ecotoxicity - Aquatic Toxicity**

**Cyclododecane, hexabromo- (present in Spiracoustic only) (25637-99-4)**

96 Hr LC50 Lepomis macrochirus: >100 mg/L [semi-static]  
72 Hr EC50 Skeletonema costatum: 0.0093-0.37 mg/L

**Carbon black (present in black products only) (1333-86-4)**

24 Hr EC50 Daphnia magna: >5600 mg/L

**Antimony trioxide (1309-64-4)**

96 Hr LC50 Pimephales promelas: 833.0 mg/L; 96 Hr LC50 Lepomis macrochirus: 530 mg/L; 96 Hr LC50 Brachydanio rerio: >1000 mg/L [static]  
 72 Hr EC50 Selenastrum capricornutum: 67 mg/L  
 7 Hr EC50 Pseudomonas putida: >3.5 mg/L  
 48 Hr EC50 Daphnia magna: >1000 mg/L

**Section 13 - Disposal Considerations**

**US EPA Waste Number & Descriptions**

**A: General Product Information**

This product is not regulated as a hazardous waste by the U.S. Environmental Protection Agency (EPA) under Resource Conservation and Recovery Act (RCRA) regulations.

**B: Component Waste Numbers**

No EPA Waste Numbers are applicable for this product's components.

**Disposal Instructions**

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

**Section 14 - Transportation Information**

**Shipping Name:** This product is not classified as a hazardous material for transport.

**Section 15 - Regulatory Information**

**US Federal Regulations**

**A: General Product Information**

SARA 311/312: This product is not classified as hazardous under SARA 311/312.

**B: Component Analysis**

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

**Antimony trioxide (1309-64-4)**

CERCLA: 1000 lb final RQ; 454 kg final RQ

**State Regulations**

**A: General Product Information**

Other state regulations may apply. Check individual state requirements.

**B: Component Analysis - State**

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Fiber Glass Wool (*related to Mineral wool fiber)	65997-17-3	Yes <sup>1</sup>	No	Yes <sup>1</sup>	Yes	No	Yes <sup>1</sup>
Carbon black (present in black products only)	1333-86-4	Yes	No	Yes	Yes	Yes	Yes
Antimony trioxide	1309-64-4	Yes	No	Yes	Yes	Yes	Yes

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 cancer.

Component	CAS #
Fiber Glass Wool (*related to Mineral wool fiber)	65997-17-3
Carbon black (present in black products only)	1333-86-4
Antimony trioxide	1309-64-4

**A: TSCA Status**

This product and its components are listed on the TSCA 8(b) inventory.

None of the components listed in this product are listed on the TSCA Export Notification 12(b) list.

**International Regulations**

**A: General Product Information**

All Johns Manville glass fiber products are considered articles under both U.S. and international product regulations and as such, the products and their ingredients do not require registration or notification on the various country-specific inventories.

**B: Component Analysis - WHMIS IDL**

No components are listed in the WHMIS IDL.

**Section 16 - Other Information**

**Other Information**

Prepared for:  
 Johns Manville  
 Performance Materials  
 P. O. Box 5108  
 Denver, CO USA 80217-5108

Prepared by:  
 Johns Manville Technical Center  
 P.O. Box 625005  
 Littleton, CO USA 80162-5005

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Date	MSDS #	Reason
04/28/04	1009-2.0106	Regulatory update. Minor edits.
05/20/04	1009-2.0107	Sect. 1 Removal of discontinued trade names: 824 CAN Spin-Glas®; 830 CAN Spin-Glas®; Acoustic Backing Board; BS 476, EcoTherm™ Industrial Pipe Insulation; Fabricated Duct Board; Permacote Spiracoustic™; Pipe and Tank Insulation; Rigid Round™ (faced); Spiracoustic™; SuperRound®.
08/05/04	1009-2.0108	Sect. 1 Label ID edit. Removal of discontinued trade name, Micro-Flex CTS.
03/22/05	1009-2.0108	Sect. 1 addition of Insul-SHIELD® Coated Black from MSDS 1010. Addition of Blended Blowing Wool. Edits to Sect. 2 for new additions.
10/03/05	1009-2.0110	Section 1, SuperVane was removed. Discontinued product.
11/17/05	1009-2.0111	Regulatory update. Minor edits in Sections 8, 11, and 15. Removed all revision notes prior to 2004. Revision notes are stored in database archives.
01/31/07	1009-2.0112	Addition of Micro-Lok HP to trade names. Updates made throughout SDS for current trade names listed on this SDS. Section 15 TSCA 12b edits. Removed DBDO. These products are articles under TSCA and DBDO does not need to be reported under TSCA 12b.

This is the end of MSDS # 1009

**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>	0
<b>FLAMMABILITY</b>	0
<b>REACTIVITY</b>	0
<b>PERSONAL PROTECTION</b>	A
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 WATER BASED ADHESIVE  
**MANUFACTURER CODE I.D.:** WSA

## SECTION II - HAZARDOUS INGREDIENTS

**NONE HAZARDOUS**

## SECTION III - HEALTH INFORMATION

### EFFECTS OF SHORT TERM OVEREXPOSURE

**EYE:** No hazard in normal industrial use.

**INHALATION:** No hazard in normal industrial use.

**SKIN:** No hazard in normal industrial use.

**SWALLOWING:** No hazard in normal industrial use.

**EFFECTS OF REPEATED EXPOSURE:** This product should be considered non-hazardous and has no known chronic effects.

**TARGET ORGANS:** N.E

**CARCINOGENICITY:** N.E

### TOXICOLOGY INFORMATION

**ORAL LD%, SPECIES TESTED:** Greater than 5000 mg/kg

**NOTES ON ORAL TOXICITY:** Non toxic

**NOTES ON DERMAL TOXICITY:** Non toxic

**NOTES ON INHALATION TOXICITY:** Product contains less than 0.2% by weight residual vinyl acetate. Vinyl acetate vapors have caused tumors in the respiratory tract of laboratory animals exposed to 600 ppm over a lifetime. 200 ppm caused irritation, and 50 ppm produced no observable effects. There is no evidence of adverse effects on humans exposed to levels at or below the ACGIH TWA of 10 ppm.

**NOTES ON EYE IRRITATION:** May be mildly irritating, as with any foreign material in the eye.

## SECTION IV - FIRST AID AND EMERGENCY PROCEDURES

**SWALLOWING:** None required.

**INHALATION:** Not normally required.

**EYES:** Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

**SKIN:** None required.

## SECTION V - PHYSICAL DATA

**BOILING RANGE:** >212°F

**VAPOR DENSITY:** (AIR = 1) 0.62

**VAPOR PRESSURE(mmHg) :** 17.5 at 20c

**VOC:**<2 g/l

**SPECIFIC GRAVITY (WATER = 1):** 1.180

**SOLUBILITY IN WATER:** Miscible

**PURE MATERIAL OR MIXTURE:** Mixture

**APPEARANCE/PHYSICAL DESCRIPTION:** Gray liquid, typical slight, sweet odor.

**MELTING POINT:** <40°F

**% VOLATILE BY VOLUME:** 44

**EVAPORATION RATE:**1

**WEIGHT LB./GAL.:** 9.0

**WEIGHT LB./GAL:** 9.8

**PH:** AS IS 4.8

**PHYSICAL FORM:** Liquid

## SECTION VI - FIRE AND EXPLOSION DATA

**NFPA FLAMMABILITY CLASSIFICATION:** 0

**EXTINGUISHING MEDIA:** CO2, dry chemical, foam.

**SPECIAL FIRE FIGHTING PROCEDURES:** N.E.

**LOWER EXPLOSIVE LIMIT (%):** N.E.

**FLASHPOINT:** N.E.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** N.E.

**UPPER EXPLOSIVE LIMIT (%):** N.E.

**AUTOIGNITION:** Unknown

## SECTION VII - REACTIVITY DATA

### STABILITY:

Stable

### COMPATIBILITY (MATERIALS TO AVOID)

Materials that react with water.

### HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide.

### HAZARDOUS POLYMERIZATION

Will not occur.

## SECTION VIII - ENVIRONMENTAL INFORMATION

### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Spills should be taken up with suitable absorbent and placed in containers. Spill areas can be washed with water. Collect wash water for approved disposal. Do not flush to sewer or waterway.

### WASTE DISPOSAL

Waste disposal should be in accordance with existing Federal, State, and Local Environmental Regulations.

### EMPTY CONTAINER WARNINGS

Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

## SECTION IX - PERSONAL PROTECTION INFORMATION

**PERSONAL PROTECTIVE EQUIPMENT REQUIRED:** Normal work conditions; Maintenance/Repair.

**RESPIRATORY PROTECTION:** None required under normal handling conditions.

**VENTILATION:** General.

**HAND PROTECTION:** Gloves are not normally required for foreseeable conditions of use.

**EYE PROTECTION:** Wear safety glasses with side shields.

**CLOTHING REQUIREMENTS:** Protective clothing is normally not necessary for foreseeable conditions of use.

**CHANGE/REMOVAL OF CLOTHING:** None required.

**WASH REQUIREMENTS:** None.

## SECTION X - SPECIAL PRECAUTIONS

### HANDLING AND STORAGE

**STORAGE TEMPERATURE:** 40°F - 100°F

Protect from freezing

## SECTION XI - OTHER INFORMATION

### SHIPPING INFORMATION

**DOT SHIPPING INFORMATION:** N.E.

**DOT HAZARD CLASS:** N.E.

**DOT REPORTABLE QUANTITY:** None

### UNITED NATION INFORMATION

**UN NUMBER:** None

**UN CLASS:** None

### OTHER REGULATORY

**TSCA:** All components are on the TSCA inventory.

**SARA/TITLE III:** This product contains no substances at or above the reporting threshold under Section 313, based on data available.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. WHILE THE INFORMATION IS BELIEVED TO BE RELIABLE, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS 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.**

## MATERIAL SAFETY DATA SHEET

MSDS 0022

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

		HMIS CODES	
PRODUCT NAME	Jim PR-1 or Clear PR-2	Health	3
		Flammability	3
		Reactivity	1
PRODUCT CODES	55711, 55713, 55715, 55717, 55719, 55735, 55737, 55739	PPI	B
CHEMICAL FAMILY	Organic		
USE	PVC & CPVC Primer		
MANUFACTURER'S NAME	The RectorSeal Corporation	EMERGENCY TELEPHONE NO.	
	2601 Spenwick Drive	Chemtrec 24 Hours	
	Houston, Texas 77055 USA	(800) 424-9300	
VALIDATION DATE	September 14, 2006	TECHNICAL SERVICE TELEPHONE NO.	
		(800) 231-3345	
REVISION DATE	September 14, 2006		

## Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS
70-90	78-93-3	Methyl Ethyl Ketone	
		ACGIH TLV	200 ppm
		OSHA PEL	200 ppm
		STEL	300 ppm
5-15	109-99-9	Tetrahydrofuran	
		ACGIH TLV	50 ppm
		OSHA PEL	200 ppm
		STEL	250 ppm
5-15	108-94-1	Cyclohexanone	
		ACGIH TLV	20 ppm (skin)
		OSHA PEL	50 ppm

## Section 3 -- HAZARDS IDENTIFICATION

## SUMMARY OF ACUTE HAZARDS

Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.

## ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

## INHALATION

Overexposure may cause coughing, shortness of breath, dizziness, central nervous system depression, intoxication and collapse. It may cause irritation to the respiratory tract and to other mucous membranes.

## EYE CONTACT

Severely irritating. If not removed promptly, will injure eye tissue, which can result in permanent damage.

## SKIN CONTACT

Frequent or prolonged contact may irritate and cause dermatitis. Low order of toxicity.

## INGESTION

Low order of toxicity. Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause

bronchiopneumonia or pulmonary edema.

#### SUMMARY OF CHRONIC HAZARDS

Repeated or prolonged exposure may cause signs of central nervous system depression and respiratory irritation. This material has been shown to induce tumors in laboratory animals.

#### 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.

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#### Section 4 -- FIRST AID MEASURES

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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; use soap if available. Remove contaminated clothing.

If in EYES: Immediately flush with large amounts of water for at least 15 minutes. Get prompt medical attention.

If SWALLOWED: If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

---

#### Section 5 -- FIRE FIGHTING MEASURES

---

FLASH POINT	LEL	UEL
17 F (-8 C) SETA CC	2%	11.8%

#### 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: Extremely flammable - very low flash point. Vapors are heavier than air and may travel along ground or to low spots at considerable distance to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture closed containers.

---

#### Section 6 -- ACCIDENTAL RELEASE MEASURES

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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. If transferring this material to other containers, ground all containers to avoid static electricity buildup and discharge which may ignite flammable vapors.

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.

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#### Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

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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.

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#### Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

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BOILING POINT:	151 F (66 C) @ 760mm Hg
SPECIFIC GRAVITY (H2O = 1):	0.91
VAPOR PRESSURE (mm Hg):	140 @ 68 F (20 C)
MELTING POINT:	N/A
VAPOR DENSITY (AIR = 1):	2.5
EVAPORATION RATE (ETHYL ACETATE = 1):	6
APPEARANCE/ODOR:	Clear or Purple Liquid/Pungent Odor
SOLUBILITY IN WATER:	Soluble

---

#### Section 10 -- STABILITY AND REACTIVITY

---

STABILITY: Can form potentially explosive peroxides upon long standing in air.

CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing, acidic and basic conditions.

INCOMPATIBILITY (MATERIALS TO AVOID): Oxidizers, acids and bases.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO<sub>2</sub>, HCl and fragmented hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

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#### Section 11 -- TOXICOLOGY INFORMATION

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##### CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen. Tetrahydrofuran - The National Toxicology Program has reported that exposures of mice and rats to THF vapor levels up to 1800 ppm 6hr/day, 5 days/week for their lifetime caused an 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.

---

##### TOXICOLOGY DATA

Ingredient Name

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##### Methyl Ethyl Ketone

Oral-Rat LD50:2737 mg/kg  
Inhalation-Rat LC50:23,500 mg/m<sup>3</sup>/8H

##### Tetrahydrofuran

Oral-Rat LD50:1650 mg/kg  
Inhalation-Rat LC50:21,000 ppm/3H

##### Cyclohexanone

Oral-Rat LD50:1535 mg/kg  
Inhalation-Rat LC50:8000 ppm/4H

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## Section 12 -- Ecological Information

-----  
ECOLOGICAL DATAIngredient Name  
-----

## Methyl Ethyl Ketone

Food Chain Concentration Potential: None  
 WATERFOWL TOXICITY: N/A  
 BOD: 214%  
 AQUATIC TOXICITY: 5640 mg/l/48 hr/bluegill/TM/fresh water

## Tetrahydrofuran

Food Chain Concentration Potential: None  
 WATERFOWL TOXICITY: N/A  
 BOD: N/A  
 AQUATIC TOXICITY: N/A

## Cyclohexanone

Food Chain Concentration Potential: None  
 WATERFOWL TOXICITY: N/A  
 BOD: N/A  
 AQUATIC TOXICITY: N/A

=====  
Section 13 -- DISPOSAL CONSIDERATIONS  
-----

Waste Classification: RCRA classified hazardous waste. Dispose of absorbed materials and liquid waste in approved, controlled incineration facility in accordance with all local, state and federal regulations.

Disposal Method: Incineration  
 =====

Section 14 -- TRANSPORTATION INFORMATION  
-----

DOT: Flammable Liquid, N.O.S. (Methyl Ethyl Ketone & Tetrahydrofuran),  
 Class 3, UN 1993, PG II, ERG#127. Quarts and less: Consumer Commodity,  
 ORM-D

OCEAN (IMDG): Flammable Liquid, N.O.S. (Methyl Ethyl Ketone & Tetrahydrofuran),  
 Class 3, UN 1993, PG II, IMDG#3230, EMS#3-07

AIR (IATA): Flammable Liquid, N.O.S. (Methyl Ethyl Ketone & Tetrahydrofuran),  
 Class 3, UN 1993, PG II, ERG#127.

WHMIS (CANADA): Class B-2  
 =====

Section 15 -- REGULATORY INFORMATION  
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## REGULATORY DATA

Ingredient Name  
-----

## Methyl Ethyl Ketone

SARA 313	Yes
TSCA Inventory	Yes
CERCLA RQ	5,000 lb.
RCRA Code	U159

## Tetrahydrofuran

SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	1,000 lb.
RCRA Code	U213

## Cyclohexanone

SARA 313	No
TSCA Inventory	Yes
CERCLA RQ	5,000 lb.
RCRA Code	U057

 =====

## Section 16 -- OTHER INFORMATION

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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





**PRODUCT: SILVALOY<sup>®</sup> 15**  
**(AWS BCuP-5)****NOMINAL COMPOSITION:**

---

Silver	15.00 ± 0.50%
Phosphorus	5.00 ± 0.20%
Copper	Balance
Total Other Elements	0.15% Max.

**PHYSICAL CONSTANTS:**

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Solidus	1190°F (643°C)
Liquidus	1475°F (802°C)
Brazing Range	1300-1500°F (704-816°C)
Specific Gravity	8.44
Density (lb/cu in)	0.305
Electrical Conductivity (% IACS)	9.9
Electrical Resistivity (Michroh-m-cm)	17.4
Color	Light Copper

**DESCRIPTION:**

---

**SILVALOY 15** is used for the brazing of copper and copper alloys, brass and bronze. It can also be used on silver, tungsten and molybdenum. It is very effective for joining pipe and tubing and is widely used for electrical work.

**SILVALOY 15** should not be used on ferrous metals or copper alloys containing more than 10% nickel because of phosphorous embrittlement due to reactions with iron or nickel. Of the phos-copper brazing filler metals, **SILVALOY 15** has more ductility and better electrical conductivity than the lower silver content phos-coppers. It has good flow and wetting properties on copper, brass and bronze. Of the phos-copper filler metals, **SILVALOY 15** has the most "sluggish" flow characteristics. This enables it to fill gaps better. The recommended joint clearances are between 0.001" and 0.005". Melting of **SILVALOY 15** is virtually complete at 1300°F (704°C) even though the liquidus is not yet reached. Best results are obtained when brazing slightly above this temperature.

**PROPERTIES OF BRAZED JOINTS**

---

Generally, the joint strength using **SILVALOY 15** will surpass the strengths of the base metals. Strength is a function of the base metals being joined, type of joint, design of joint, joint clearances and brazing procedures. The recommended maximum operating temperatures for **SILVALOY 15** are 300°F (continuous service) and 400°F (short time service). Corrosion resistance is satisfactory except when the joint is in contact with sulfurous atmosphere (especially at elevated temperatures).



**PRODUCT:** SILVALOY® 15 - CONTINUED  
(AWS BCuP-5)

**APPLICATIONS:**

The phosphorus content of **SILVALOY 15** acts as a fluxing agent and no flux is necessary when brazing copper to copper joints. However, when used with a copper alloy or one of the other brazeable metals, a brazing flux must be used to promote wetting, bonding and flow throughout the joint. The flux used must be active within the required temperature range of **SILVALOY 15** and active throughout the heating cycle. The flow point of **SILVALOY 15** is 1300°F (704°C).

**SPECIFICATIONS:**

AWS A5.8	BCuP-5
ASME	BCuP-5
QQ-B-650	BCuP-5
QQ-B-654	BCuP-5

**SAFETY INFORMATION:**

The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting". For more complete information, refer to the Material Safety Data Sheet for **SILVALOY 15**.

**AVAILABLE FORMS:**

Standard Forms of **SILVALOY 15** are wire, strip and preforms.

**LIABILITY-DISCLAIMER:**

Wolverine Joining Technologies, LLC, seeks to represent reliable information concerning the composition, properties and use of its products. The technical information provided in this publication is provided at no charge and is without guarantee, warranty or responsibility of any kind, expressed or implied.

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[www.silvaloy.com](http://www.silvaloy.com)



1125 W. Amity Rd.  
Boise, ID 83705  
208-336-1643

Emergency Telephone Number: Chemtrec (800) 424-9300  
Or Norco (208) 336-1643

## PRODUCT NAME: ACETYLENE

### MATERIAL SAFETY DATA SHEET

#### Identification

Product Name: Acetylene  
CAS Number: 74-86-2  
Chemical Family: Alkyne  
Chemical Formula: C<sub>2</sub>H<sub>2</sub>  
Common Names/Synonyms: Ethyne, Acetylen, Welding Gas  
MSDS Identification Number: 1001  
Prepared By: Quality Dept.

Revision Date: 08/13/04  
Last Review Date: 08/13/04

#### Composition/Information on Ingredients

##### Exposure Limits<sup>1</sup>:

INGREDIENT	% VOLUME	PEL-OSHA <sup>2</sup>	TLV-ACGIH <sup>3</sup>	LD <sub>50</sub> or LC <sub>50</sub> Route/Species
Acetylene Formula: C <sub>2</sub> H <sub>2</sub> CAS #: 74-86-2 RTECS #: AO9600000	95.0% to 99.6%	Not Available	Simple Asphyxiant	Not Available
Acetone Formula: C <sub>3</sub> H <sub>6</sub> O CAS #: 67-64-1 RTECS #: AL3150000	Not Available	1000 ppm TWA	500 ppm TWA 750 ppm STEL	LD <sub>50</sub> : 1297 mg/kg ingestion/mouse

<sup>1</sup> Refer to individual state or provincial regulations, as applicable, for limits which may be more stringent than those listed here.

<sup>2</sup> As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993).

<sup>3</sup> As stated in the ACGIH 2004 Threshold Limit Values for Chemical Substances and Physical Agents

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

#### Hazards Identification

##### Emergency Overview:

Flammable colorless gas with slight garlic odor. Dangerous fire and explosion hazard. Avoid heat, sparks and flames. Simple Asphyxiant – This product does not contain oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%. May cause anesthetic effects. Highly flammable under pressure. Spontaneously combustible in air at pressures above 15 psig. Acetylene liquid is shock sensitive. Contents under pressure. Use and store below 125<sup>o</sup>F, (52<sup>o</sup>C).

##### Route of Entry:

Skin Contact No	Skin Absorption No	Eye contact No	Inhalation Yes	Ingestion No
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##### Health Effects:

Exposure Limits Yes	Irritant Yes	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No

Synergistic Effects:  
None Reported

Carcinogenicity: NTP: No      IARC: No      OSHA: No

## Hazards Identification Continued

**Eye Effects:**

May cause irritation.

**Skin Effects:**

Skin effects are not likely. Contact with liquid acetylene may cause irritation and dermatitis upon repeated exposures.

**Ingestion Effects:**

Ingestion is unlikely.

**Inhalation Effects:**

Acetylene is an asphyxiant and may cause anesthetic effects at high concentrations. High concentrations may exclude an adequate supply of oxygen to the lungs. Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgment, depression of all sensations, emotional instability and fatigue. As asphyxiation progresses, nausea, vomiting, prostration and loss of consciousness may result, eventually leading to convulsions, coma and death.

Under normal operating conditions, acetone is not released from the cylinder. However, if the cylinder is overcharged with acetone or acetylene, acetone may occasionally "spit" out. Acetone is primarily an irritant and CNS depressant. High concentrations may have central nervous system effects causing headache, nausea, dizziness, vomiting and fatigue.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

**Medical Conditions Aggravated by Exposure:**

May aggravate pre-existing skin disorders.

**NFPA Hazard Codes**

Health: 0  
Flammability: 4  
Instability: 2

**HMIS Hazard Codes**

Health: 2  
Flammability: 4  
Physical Hazards: 2

**Ratings System**

0 = No Hazard  
1 = Slight Hazard  
2 = Moderate Hazard  
3 = Serious Hazard  
4 = Severe Hazard

Hazard codes based on recommendations in CGA P-19 2004, *CGA Recommended Hazard Ratings for Compressed Gases*.

## First Aid Measures

**Eyes:**

None normally required. Consult a physician if direct contact with pressurized material occurs. Immediately flush with low pressure, cool water for at least 15 minutes, opening eyelids to ensure flushing. Get medical attention.

**Skin:**

Contaminated clothing presents a fire hazard and should be immediately removed. Wash affected areas with soap and warm water. If irritation develops, seek medical attention.

**Ingestion:**

Not normally required.

**Inhalation:**

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive. Keep victim warm and quiet.

<b>Fire Fighting Measures</b>
-------------------------------

Conditions of Flammability: Flammable		
Flash point: Not Available	Method: Not Applicable	Autoignition Temperature: 565°F (296°C)
LEL (%): 2.3	UEL (%): 100	
Hazardous combustion products: Carbon monoxide, Carbon dioxide		
Sensitivity to mechanical shock: May decompose		
Sensitivity to static discharge: May ignite		

**Fire and Explosion Hazards:**

Fire will produce carbon monoxide and carbon dioxide. Pure acetylene can ignite by decomposition above 15 psig; therefore, the UEL is 100% if the ignition source is of sufficient intensity. Pure acetylene is shock sensitive. Do not allow smoking in storage areas or when handling. Cylinders may rupture violently from pressure when involved in a fire situation.

GASEOUS ACETYLENE IS SPONTANEOUSLY COMBUSTIBLE IN AIR AT PRESSURE ABOVE 15 PSI (270 kPa.). It requires a very low ignition energy so that fires which have been extinguished without stopping the flow of gas can easily reignite with possible explosive force. Acetylene has a density very similar to that of air so when leaking it does not readily dissipate. Gas may travel to a source of ignition and flash back.

Fires involving acetylene occur occasionally at fusible metal pressure relief plugs at the tops and bottoms of cylinders, commonly due to hot metal or slag being dropped on the fusible plugs. When the fusible plug releases, a large volume of acetylene will rush out creating a "roaring" sound. The flame may extend a foot or two away from the cylinder until the pressure is reduced. In some cases, the other end of the cylinder may develop a coating of frost.

**Extinguishing Media:**

Water, carbon dioxide or dry chemical.

**Fire Fighting Instructions:**

**WARNING: ALWAYS EXTINGUISH A FIRE BEFORE CLOSING THE CYLINDER VALVE.** If the flame is small from the fusible plug or valve stem, try to put it out. Use non-sparking tools to close container valves. Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. If fire is allowed to keep burning it is likely that the fusible plug will melt and result in a large release of acetylene. A glove or heavy cloth or any wet material slapped on the flame will frequently extinguish it.

If the flame is large, burning from a fusible plug, **DO NOT** try to put it out unless the cylinder is outdoors or in a very well ventilated area free from sources of ignition. Usually it is very difficult to extinguish large fires because escaping acetylene may be reignited by adjacent ignition sources, thereby possibly creating a confined space explosion. Continue to cool fire-exposed cylinders until well after flames are extinguished. Cylinders should not be moved until they have reached ambient temperature in case internal decomposition is taking place. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. Direct 500 GPM water stream onto containers above liquid level with remote monitors. Limit the number of personnel in proximity of fire and evacuate surrounding areas in all directions

<b>Accidental Release Measures</b>
------------------------------------

Extinguish all ignition sources. No smoking, flares, flames or sparks in hazard area. Evacuate all personnel from affected areas and provide maximum explosion proof ventilation. Never enter a confined space or other area where the concentration is greater than 10% of the LEL (0.23%). Isolate the area for over ½ mile in all directions in the event of leakage of an acetylene trailer. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or container valve contact the appropriate emergency telephone number listed in Section 1 or call your closest Norco/NorLab location.

If possible to do so safely, shut off ignition sources and stop the leak by closing the valve. For small leaks, cylinders may be moved to an area outdoors and away from any source of ignition. Circumstances which it is advisable to attempt removal of the cylinder are when cylinders are in close proximity to other compressed gases, when highly flammable materials or hazardous materials are in the vicinity of the acetylene cylinder(s), or where protection of the building is unusually difficult and spreading of a fire may produce a major loss of life or property. **DO NOT ATTEMPT TO REMOVE CYLINDERS THAT HAVE BEEN EXPOSED TO HEAT.** When the cylinder is removed, it may be hosed down with water to keep it cool. Open the valve slowly to let the acetylene escape. Tag the cylinder with "WARNING – Leaking Flammable Gas". Close valve when empty.

## Handling and Storage

**Electrical Classification:**

Class I, Group A.

All acetylene piped systems and associated equipment must be grounded. Never use copper piping for acetylene service. Only steel or wrought iron pipe should be used. Open cylinder valve minimum amount required (no more than 1- 1.5 turns) to deliver acceptable flow to enable the cylinder to be closed quickly in an emergency situation. Acetylene is shipped in a cylinder packed with a porous mass material, and a liquid solvent, commonly acetone. Acetylene is dissolved in the acetone solution and dispersed throughout the porous medium. When the valve of a charged acetylene cylinder is opened, the acetylene comes out of solution and passes out in gaseous form. **IT IS CRUCIAL THAT FUSE PLUGS IN THE TOPS AND BOTTOMS OF ALL ACETYLENE CYLINDERS BE THOROUGHLY INSPECTED WHENEVER HANDLED. REMOVE AND QUARANTINE IN A SAFE LOCATION ANY DEFECTIVE CYLINDER.**

Post "NO SMOKING OR OPEN FLAMES" signs in use and storage areas. There should be no sources of ignition in areas where this product is being used or stored. . Never leak check with open flame. Use only in well-ventilated areas.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavy traffic areas and emergency exits. Outside or detached storage is preferred. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Close valve after each use and when the container is empty. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to piping or systems. Do not use gas directly from cylinder. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

Never attempt to repair or alter cylinders. Never tamper with pressure relief devices or fusible plugs. Under no circumstances allow a torch or flame to contact the fusible plug. While welding, avoid contact of the cylinder, welding equipment or electrical circuits.

If rough handling or other circumstances should cause any fusible plug to leak, move the cylinder to an open space well away from a possible source of ignition. Place a sign on the cylinder warning of "Leaking Flammable Gas". Call you supplier.

Unless oxygen and acetylene are separated, there should be a non-combustible partition of at least 5 ft high with a fire resistance rating of one-half hour between cylinders. In the U.S. cylinders stored inside a building near user locations must be limited to a total capacity of 2500 ft<sup>3</sup> of gas, exclusive of in-use or attached for use cylinders.

Do not store cylinders on their side. This makes the acetylene less stable and less safe and increases the likelihood of solvent loss and resultant decomposition.

For additional recommendations consult Compressed Gas Association Pamphlet P-1, G-1, G-1.1, AV-9, C-13, SB-4, and NFPA 51.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

## Exposure Controls, Personal Protection

**Engineering Controls:**

Use local exhaust and general ventilation systems to prevent build up of flammable concentrations. May use hood with forced ventilation when handling small quantities. If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres. Consult the National Electrical Code of details.

**Eye/Face Protection:**

Safety goggles or glasses.

**Skin Protection:**

Protective gloves suitable for the job.

### Exposure Controls, Personal Protection Continued

**Respiratory Protection:**

For emergency release use a positive pressure NIOSH approved air-supplying respirator system (SCBA or airline/escape bottle) using a minimum Grade D air.

**Other/General Protection:**

Safety shoes. Cotton clothing is recommended to prevent static build-up.

### Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure at 70°F	: 650	psia
Vapor density at STP (Air=1)	: Not Available	
Evaporation point	: Not Available	
Boiling Point	: -118.8	°F
	: -83.8	°C
Freezing point	: -113	°F
	: -80.6	°C
pH	: Not Available	
Specific gravity (H <sub>2</sub> O = 1 at 77°F and 1 atm.)	: 0.906	
Oil/water partition coefficient	: Not Available	
Solubility (H <sub>2</sub> O)	: Soluble	
Odor threshold	: Not Available	
Odor and appearance	: Colorless gas. Acetylene of 100% purity is odorless but commercial purity has a distinctive garlic-like odor.	

### Stability and Reactivity

**Stability:**

Unstable. Stable as shipped. Shock sensitive in the liquid state. Do allow free gas (outside of cylinder) to exceed 15 psig. Do not expose cylinders to sudden shock or heat. Acetylene will decompose violently with cylinder failure.

**Incompatible Materials/Conditions:**

Oxygen and other oxidizers including all halogens and halogen compounds. Forms explosive acetylide compounds with copper, mercury, silver, brasses containing > 66% copper and brazing materials containing silver or copper. The use of acetylene and these metals, or their salts, compounds, and high concentration alloys should be avoided. Moisture, certain acids and alkaline materials may enhance the formation of copper acetylides. Keep away from heat, sparks, flames and other ignition sources.

**Hazardous Decomposition Products:**

Acetylene decomposes at high pressure to its constituent elements of carbon and hydrogen. Burning may produce carbon monoxide and carbon dioxide.

**Hazardous Polymerization:**

Temperatures as low as 250 °F (121 °C) at high pressure, or at low pressure in the presence of a catalyst are sufficient to initiate a polymerization reaction. The hazard here is that the polymerization normally liberates heat and may, therefore, lead to ignition and decomposition of acetylene if conditions permit.

### Toxicological Information

**Skin and Eye:**

Adverse effects are not expected. Repeated contact may cause minor irritation.

**Inhalation:**

High concentrations (10-20% in air) cause symptoms similar to that of being intoxicated. As a narcotic gas or intoxicant, it causes hypercapnia (an excessive amount of carbon dioxide in the blood). Repeated exposures to tolerable levels have not shown deleterious effects. TC<sub>LO</sub>, human – inhalation of 20 ppm inhaled has been shown to cause headache and dyspnea. Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

<b>Ecological Information</b>
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No adverse ecological effects expected. Product does not contain any Class I or Class II ozone-depleting chemicals. Not toxic. Will not bioconcentrate.

<b>Disposal Considerations</b>
--------------------------------

Do not attempt to dispose of residual waste or unused quantities in returnable containers. Return in shipping container, *properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place* to Norco for proper disposal.

<b>Transport Information</b>
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Parameter	United States DOT	Canada TDG
<b>Proper Shipping Name:</b>	Acetylene, dissolved	Acetylene, dissolved
<b>Hazard Class:</b>	2.1	2.1
<b>Identification Number:</b>	UN 1001	UN 1001
<b>Shipping Label:</b>	Flammable Gas	Flammable Gas

<b>Regulatory Information</b>
-------------------------------

**SARA Title III Notifications and Information:**

**SARA Title III – Section 313 Supplier Notification:**

This product does not contain toxic chemicals subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372.

**SARA Title III – Hazard Classes:**

Acute Health Hazard

Fire Hazard

Sudden Release of Pressure Hazard

<b>Other Information</b>
--------------------------

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

**Disclaimer of Expressed and Implied Warranties:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

## MATERIAL SAFETY DATA SHEET

MSDS 0170

## Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

		HMIS CODES	
PRODUCT NAME	Metacaulk 1100	Health	1
		Flammability	0
		Reactivity	0
PRODUCT CODES	66319, 66317, 66318	PPI	B
CHEMICAL FAMILY:	Organic/Inorganic		
USE	Firestopping Sealant		
MANUFACTURER'S NAME	The RectorSeal Corporation	EMERGENCY TELEPHONE NO.	
	2601 Spenwick Drive	Chemtrec 24 Hours	
	Houston, Texas 77055 USA	(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 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 (H<sub>2</sub>O = 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, CO<sub>2</sub> and fragmented hydrocarbons.

HAZARDOUS POLYMERIZATION: Will not occur.

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Section 11 -- TOXICOLOGY INFORMATION

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## CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

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## TOXICOLOGY DATA

Ingredient Name

None

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Section 12 -- Ecological Information

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## ECOLOGICAL DATA

Ingredient Name

None

Food Chain Concentration Potential	N/A
WATERFOWL TOXICITY	N/A
BOD	N/A
AQUATIC TOXICITY	N/A

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Section 13 -- DISPOSAL CONSIDERATIONS

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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.

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Section 14 -- TRANSPORTATION INFORMATION

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DOT:	Non-Regulated
OCEAN (IMDG):	Non-Regulated
AIR (IATA):	Non-Regulated
WHMIS (CANADA):	Non-Regulated

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Section 15 -- REGULATORY INFORMATION

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## REGULATORY DATA

Ingredient Name

None

SARA 313	N/A
TSCA Inventory	All components listed
CERCLA RQ	N/A
RCRA Code	N/A

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Section 16 -- OTHER INFORMATION

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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



ATTN: COLBY  
A PGS

## TruZinc® Steel

### Material Safety Data Sheet

#### SECTION 1 - COMPANY AND PRODUCT IDENTIFICATION

**Company Name:**
**Steelscape, Inc.**

 222 West Kalama River Rd  
 Kalama, WA 98625  
 Tel: (360) 673-8200

 11200 Arrow Route  
 Rancho Cucamonga, CA 91730  
 Tel: (909) 987-4711

 7001 Valley Road  
 Fairfield, Alabama 35064  
 Tel: (205) 787-9300

**In Case of Emergency Contact:** CHEMTREC (24 hours) Tel: 1-800-424-9300

**Product Name:** TruZinc® Steel

**Chemical Name(s):** Iron (Fe) - base metal      Aluminum (Al) - metallic coating  
 Zinc (Zn) - metallic coating

#### SECTION 2 - INGREDIENTS (Typical) AND RECOMMENDED OCCUPATIONAL EXPOSURE LIMITS

**Base Steel (Cold Rolled Sheet)**

Ingredient	CAS No.	Wt. %	LD50 or LC50 Species/Route	OSHA PEL (mg/cu3)	ACGIH-TLV (mg/cu3) (TWA unless specified)
Iron	7439-89-6	Balance	5.4 gm/kg - mouse/oral	10 Iron Oxide Fume	5 - Iron Oxide Fume as Fe
Carbon	7440-44-0	0.30 max	No Information	Not Established	Not Established
Manganese	7439-96-5	1.00 max	9 gm/kg rat/oral	5 - ceiling as Mn	5 - Dust as Mn / 1 - Fume as Mn 3 - Fume as Mn (STEL)
Phosphorus	7723-14-0	0.15 max	No Information	0.1 - Total	None for Inorganic Phosphates
Sulfur	7704-34-9	0.05 max	No Information	15 - Total Dust 5 - Respirable Fraction	13 - as SO2
Silicon	7440-21-3	0.03 max	No Information	15 - Total Dust 5 - Respirable Fraction	10 - Total
Aluminum	7429-90-5	0.10 max	No Information	10 - Total Dust 5 - Respirable Fraction	Not Established

**Note:** Base Steel may contain the following trace or residual elements: Chromium (.10% max), Copper (.12% max), Molybdenum (.10% max), Nickel (.12% max), Columbium (.06% max) Tin (.03% max), Titanium (.06% max) and Vanadium (.08% max)

**Metallic Coating (TruZinc Steel)**

Ingredient	CAS No.	Wt. %	LD50 or LC50 Species/Route	OSHA PEL (mg/cu3)	ACGIH-TLV (mg/cu3) (TWA unless specified)
Aluminum	7429-90-5	0.10 - 0.50	No Information	10 - Total Dust 5 - Respirable Fraction	10 - Metal Dust as Al 5 - Fume as Al
Zinc	7440-66-6	99.2 - 99.5	No Information	5 - Fume as ZnO	5 - Fume as ZnO
Antimony	7440-36-0	0.01 - 0.05	No Information	0.5 - TWA	0.5 - TWA
Iron	7439-89-6	0.02 max	5.4 gm/kg mouse/oral	10 Iron Oxide Fume	5 Iron Oxide Fume as Fe



### SECTION 3 - PHYSICAL AND CHEMICAL CHARACTERISTICS

<b>Physical State:</b>	SOLID STATE	<b>Color, Appearance:</b>	Silver, bright crystalline
<b>Odor:</b>	NONE	<b>Sp. Gravity (H2O = 1):</b>	7.6-7.8
<b>Melting Point (Base Steel):</b>	2,800 F	<b>Melting Point (Metallic Coating):</b>	700 F
<b>Boiling Point:</b>	N/A	<b>Flash Point:</b>	N/A
<b>Vapor Pressure (mm Hg):</b>	N/A	<b>Vapor Density (Air = 1):</b>	N/A
<b>Solubility in Water:</b>	INSOLUBLE	<b>Reactivity in Water:</b>	NONE (in solid state)
<b>Pct. Volatile by volume:</b>	N/A	<b>Flammable Limits in Air (% vol.):</b>	N/A
<b>Extinguisher Media:</b>	DOES NOT BURN	<b>Auto-ignition temperature:</b>	N/A

### SECTION 4 - PHYSICAL HAZARDS

**Chemical Stability:** TruZinc Steel sheet is a stable material under normal conditions of use, storage and transport.

**Hazardous Conditions To Avoid:** TruZinc Steel will react with strong acid to liberate hydrogen. Finely divided material may react with water, strong oxidizers, alkalines and hydrogenated compounds. At temperatures exceeding the melting point of the metallic coating, fumes may be liberated which contain oxides of the metallic coating constituents. At temperatures exceeding the melting point of the base metal, fumes may be liberated which contain oxides of iron and other steel alloying elements.

**Hazardous Polymerization:** Polymerization will not occur.

### SECTION 5 - HEALTH HAZARD AND FIRST AID INFORMATION

#### **Potential Health Hazard:**

TruZinc Steel in its normal form does not pose a health hazard. Inhalation of metal dust and fume may result from further processing of TruZinc Steel by the user, particularly during welding, burning, grinding and machining activities. These potential health hazards should be evaluated by the user. Non-metallic coatings are normally applied to TruZinc Steel based upon customer/end use criteria. Typical non-metallic coatings include surface passivation treatments, oils and resin treatments. These non-metallic coatings may contain hazardous substances of varying amounts. During processing of TruZinc® Steel substances of varying chemical composition and quantity may be generated by these nonmetallic coatings. MSDS information regarding these non-metallic coatings shall be supplied by Steelscape to the user upon request.

#### **Effects of Overexposure:**

Chronic inhalation concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chronic inhalation concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). 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 dust from 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 mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills. Continuous exposures to high concentrations of manganese can cause central nervous system disorders and "manganese pneumonia." Fibrosis of lung tissue from manganese exposures has also been reported for products containing manganese only. Overexposure to aluminum dust can cause shortness of breath.

Long term inhalation exposure to high concentrations (overexposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects. Prolonged or repeated contact with unprotected skin may result in skin irritation. Torching or burning operations on steel products with oil or organic coating may produce emissions which can be irritating to the eyes and respiratory tract.

**Medical Conditions Aggravated by Exposure:**

Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by fume or airborne particulate matter exposure.

**Carcinogen Information:**

Certain chromium and nickel compounds as well as organic compounds found in various coating materials have been listed as carcinogens by the NTP, IARC or OSHA.

**Emergency First Aid Measures:**

**Eye:**

Treat any foreign body in eye by flushing with large amounts of water. Seek medical attention immediately.

**Skin:**

Skin hazards are not expected. However, should dermatitis develop, affected area should be washed with mild soap and water. If irritation or other symptoms develop, seek medical attention immediately. Precautions should be taken to protect against sharp steel edges. If the skin is abraded by handling, seek medical attention immediately.

**Ingestion:**

Ingestion hazards are not expected.

**Inhalation:**

For treatment of overexposure to fumes and/or particulates, remove exposed individual to fresh air and seek medical attention immediately. Administer artificial respiration or oxygen if breathing is difficult or has stopped.



## SECTION 6 - SPECIAL PROTECTION INFORMATION

**Respiratory:**

NIOSH/MSHA approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator depends on the magnitude of exposure.

**Skin:**

Protective gloves should be worn as required for welding, burning or handling operations. If material is supplied with oil or other organic coating, wear protective gloves. However, do not continue to use gloves or work clothing that have become saturated with oil. Wash hands and any additional contact areas with soap and water or waterless hand cleaner.

**Eyes:**

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 Equipment:**

Depending on the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposure.

## SECTION 7 - SPECIAL PRECAUTIONS, SPILL/LEAK & FIREFIGHTING PROCEDURES

**Special Precautions:**

Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dust.

**Unusual Fire and Explosion Hazards:**

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

**Special Fire Fighting Procedures:**

No special fire fighting procedures are required.

**Spill/Leak Procedures:**

Spill or leak procedures are not applicable to metals in the solid state. Product must be disposed of in accordance with state and local regulations.

This Material Safety Data Sheet (MSDS) was prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Supplier Notification Requirements of SARA Title III, Section 313. This MSDS represents products which may contain toxic chemicals. The information contained in this MSDS was obtained from sources which are believed to be reliable by Steelscape. However the information is provided without any responsibility or warranty, expressed or implied regarding its accuracy or correctness. The conditions or methods of handling, storage, use and disposal of TruZinc Steel are beyond the knowledge of Steelscape. For this and other reasons, Steelscape 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 TruZinc Steel.

**WARNING:** This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm.

## 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®**

Date Prepared: 12/17/1986    Last Reviewed: 11/29/2006

Meets OSHA 29 CFR 1910.1200



**MATERIAL SAFETY INFORMATION SERVICE**

Hercules Chemical Company Inc.  
 111 South Street  
 Passaic NJ 07065  
 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 (°F):	Specific Gravity (H <sub>2</sub> O = 1):	Vapor Density (Air = 1):	Vapor Pressure (mm Hg):
N/A	1.89	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*