

WARD MANUFACTURING LLC
MATERIAL SAFETY DATA SHEET (MSDS) Page 1 of 5
DATE: April, 1997
UPDATED July, 2008

CONFORMS TO REQUIREMENTS OF OSHA STANDARD 1910.1200 "HAZARD COMMUNICATION"
AND TO VARIOUS STATE "EMPLOYEE RIGHT TO KNOW" LAW

SECTION I - PRODUCT IDENTIFICATION

This MSDS supplied for: **MALLEABLE IRON CASTINGS**

ASTM ALLOY DESIGNATION

A 47	Grade 32510	
A 197		
A 220	Grade 40010	Grade 50005
	Grade 45006	Grade 60004
	Grade 45008	Grade 70003

VENDOR NAME AND ADDRESS- WARD MANUFACTURING LLC
117 Gulick St. / P.O. Box 9
Blossburg, PA 16912

EMERGENCY PHONE NUMBER (570) 638 - 2131

FIRE HAZARD CLASS: HEALTH: 0 FLAMMABILITY: 0 REACTIVITY: 0

THE FOURTH DIAMOND:

ANSI: CAUTION: WELDING, CUTTING, OR GRINDING ON THIS CASTING
WILL GENERATE TOXIC DUST AND FUMES

N/E means none established

N/A means not applicable

N/D means no data available.

WARD MANUFACTURING LLC
MATERIAL SAFETY DATA SHEET (MSDS) Page 2 of 5
 DATE: April, 1997
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SECTION II - HAZARDOUS COMPONENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>PERCENT</u>	<u>TLV</u>	<u>PEL</u>
Carbon	7440-44-0	2.5-3.5	N/E	N/E
Silicon	7440-21-3	0.8-2.0	10 mg/cu.m	15 mg/cu-m
Manganese	7439-96-5	0.2-0.8	C5 mg/cu-m as dust 1 mg/cu.m as fume	C5 mg/ou- as dust
Nickel	7440-02-0	0.10	1 mg/cu.m	1 mg/cu.m
Chromium	7440-47-3	0.02-0.15	.5 mg/cu.m	1 mg/cu.m
Chromium (hexavalent)			.05 mg/cu.m	N/E
Aluminum	7429-90-5	0.003-0.20	10 mg/cu.m	N/E
Copper	7440-50-8	0.11-0.21	.2 mg/cu.m as fume 1 mg/cu.m as dust	.1mg/cu.m as fume 1 mg/cu.m as dust
Iron	7439-89-6	92.9-96.6	5 mg/cu-m as fume	10mg/cu.m as fume
Cerium	7440-45-1	0.01-0.40	N/E	N/E
Nitrogen	7727-37-9	0.002-0.15	N/E	N/E

Water insoluble hexavalent chromium is classified as a human carcinogen by the American Conference of Governmental Industrial Hygienists (ACGIH).

Approximately 66% of the total chromium (in welding fume) is hexavalent, and only 5% of that is insoluble. Considering the small amount of chromium in the casting, over-exposure to hexavalent chromium is not likely. (There is no hexavalent chromium in the alloy or its dust).

N/E means none established

N/A means not applicable

N/D means no data available.

WARD MANUFACTURING LLC
MATERIAL SAFETY DATA SHEET (MSDS) Page 3 of 5
DATE: April, 1997
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SECTION III - OVERVIEW

There are no chemical hazards from these castings in solid form.

Dust or fumes generated by machining, grinding, or welding on the castings will put contaminants in the air. Since the casting is more than 90 percent iron, most of the dust or fumes will be iron or iron oxide. There is no TLV for iron dust, but available information indicates that a concentration of 10 mg/cu.m. as if it were a nuisance dust, will serve as a guideline until a TLV is established.

High production dry machining of malleable iron castings usually requires local exhaust ventilation.

Flame cutting, arc gouging, or welding on the casting generates iron oxide fume. Inhalation of too much iron oxide fume over a long time can cause siderosis, sometimes called "iron pigmentation" of the lung. It can be seen on a chest x-ray but causes little or no disability. Also see the Material Safety Data Sheet for the welding rod being used.

Welding or flame cutting may convert a fraction of the chromium to the water insoluble hexavalent (carcinogenic) form, but the chromium content of the castings is so low that over-exposure is not likely.

Nickel has been shown to cause cancer in laboratory animals. However, its potential to cause cancer in humans has not been determined. The nickel content of the casting is so low that over-exposure is not likely.

Other toxic metals in the alloy are present in small amounts that will not represent a hazard if copper dust and fume are adequately controlled.

Grinding on castings that have not been cleaned or that contain embedded silica will generate significant amounts of dust containing free silica, which can cause silicosis. Good local ventilation is frequently required to prevent over-exposure in this situation. If good ventilation is not available, use a NIOSH-approved dust respirator.

N/E means none established

N/A means not applicable

N/D means no data available.

SECTION IV - PHYSICAL DATA

Physical Description:	Solid, silver gray in color, no odor.
Boiling Point:	2750° C for iron
Vapor Pressure:	N/A
Vapor Density:	N/A
Solubility in Water:	N/A
Specific Gravity:	7.86 for iron
Percent Volatile By Volume:	N/A
Evaporation Rate:	N/A

SECTION V - FIRE AND EXPLOSION DATA

Castings will not burn or explode.

SECTION VI - HEALTH HAZARD DATA

<u>EYES:</u>	Metal particles in the eyes may cause irritation if not removed.
<u>SKIN:</u>	None known.
<u>BREATHING:</u>	Prolonged or repeated over-exposure to iron oxide produced in grinding or welding may cause siderosis.
<u>SWALLOWING:</u>	N/A
<u>NOISE:</u>	Grinding or machining Castings is noisy. The OSHA limit for noise averaged over 8 hours is 90 decibels (dBA), hearing conservation program required if exposure is over 85 dBA. If noise is at or above 90 dBA, you should wear ear muffs or ear plugs.

FIRST AID

<u>IF IN EYES:</u>	Metal particles should be removed by trained individuals such as a nurse or physician.
<u>IF ON SKIN:</u>	N/A
<u>IF BREATHED:</u>	(Fumes from welding): Move to fresh air.
<u>IF SWALLOWED:</u>	N/A

N/E means none established

N/A means not applicable

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WARD MANUFACTURING LLC
MATERIAL SAFETY DATA SHEET, (MSDS) Page 5 of 5
DATE: April, 1997
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SECTION VII - REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Will not occur.
STABILITY: Stable
INCOMPATIBILITY: Iron may cause violent decomposition of hydrogen peroxide (52% by weight or greater).

SECTION VIII - SPILL OR LEAK PROCEDURES

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

If damaged, return castings to vendor or send to scrap reclaimer.

Collected dust from machining, welding, etc. may be classed as a "hazardous waste" depending on circumstances. Consult local authorities regarding disposal.

SECTION IX - PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: Wear a NIOSH approved respirator for dusts or fume if concentrations exceed the TLV or PEL.

VENTILATION: Provide general ventilation and/or local exhaust if necessary to maintain concentrations below the TLV's.

PROTECTIVE GLOVES: Work gloves advisable for handling castings.

EYE PROTECTION: Safety glasses with side shields and/or face shields for particles (grinding). Welding goggles or helmet for welding.

OTHER PROTECTIVE EQUIPMENT: Wear a protective apron and gauntlets if arc air gouging or cutting, or welding on castings. If noise is at or above 90 dBA you should wear ear muffs or ear plugs.

SECTION X - SPECIAL PRECAUTIONS OR OTHER COMMENTS

STORAGE: Keep dry to reduce rusting.

The information herein is based on the vendors MSDS with additions as necessary to comply with current regulations. The information is believed to be accurate, but under the circumstances is not warranted to be.

N/E means none established

N/A means not applicable

N/D means no data available.

mdsmall.wpd

Fire Sprinkler Pipe

A53 Schedule 40

Submittal Data Sheet



FM Approved and Fully Listed Sprinkler Pipe

Wheatland's A53 Schedule 40 steel fire sprinkler pipe is UL Listed and FM Approved, sizes 1 through 6 NPS, for use in fire sprinkler pipe applications, and is suitable for welding, threading and grooving.

Approvals and Specifications

The product meets or exceeds the following standards:

- ASTM A53, Type F, Grade A/53M 1"-4"
- ASTM A53, Grade A, 2"-6"
- ASTM A53, Grade B, 2"-6"
- ASME B36.10M
- Federal Specification WW-P-404

Manufacturing Protocols

The weld seam of Wheatland's A53 Schedule 40 is heat-treated after welding to 1400°F and is subjected to the toughest possible testing protocols to ensure the highest quality and long-lasting performance.

Finishes and Coatings

The average weight of zinc coating shall not be less than 1.8 ounces per square foot of surface (inside and outside). When galvanized pipe is bent or otherwise fabricated to a degree that causes zinc coating to stretch or compress beyond the limit of elasticity, some flaking of the coating may occur.

Product Marking

Each length of Wheatland fire sprinkler pipe is continuously stenciled to show the manufacturer, type of pipe, grade, size and length. Barcoding is acceptable as a supplementary identification method.

WEIGHTS AND DIMENSIONS CHART

NPS	NOM OD INCHES	NOMINAL WALL	WT./FT. H ₂ O FILLED	WT./LBS. FT.
2	2.375	.154	5.109	3.66
2½	2.875	.203	7.871	5.80
3	3.500	.216	10.783	7.58
4	4.500	.237	16.311	10.88
5	5.563	.258	23.262	14.63
6	6.625	.280	31.498	18.99
8	8.625	.322	—	28.58



SUBMITTAL INFORMATION

PROJECT:

CONTRACTOR:

DATE:

ENGINEER:

SPECIFICATION REFERENCE:

SYSTEM TYPE:

LOCATIONS:

COMMENTS:

Wheatland Tube 700 South Dock Street Sharon, PA 16146
P 800.257.8182 | F 724.346.7260 | info@wheatland.com | wheatland.com

 **Wheatland Tube**
JMC STEEL GROUP

Fire Sprinkler Pipe

Schedule 10 and Schedule 40

Submittal Data Sheet

FM Approved and Fully Listed Sprinkler Pipe
Wheatland's Schedule 10 and Schedule 40 steel fire sprinkler pipe is FM Approved and UL, C-UL and FM Listed.

Approvals and Specifications

Both products meet or exceed the following standards:

- ASTM A135, Type E, Grade A (Schedule 10)
- ASTM A795, Type E, Grade A (Schedule 40)
- NFPA 13

Manufacturing Protocols

Schedule 10 and Schedule 40 are subjected to the toughest possible testing protocols to ensure the highest quality and long-lasting performance.

Finishes and Coatings

All Wheatland black steel fire sprinkler pipe up to 6" receives a proprietary mill coating to ensure a clean, corrosion-resistant surface that outperforms and outlasts standard lacquer coatings. This coating allows the pipe to be easily painted, without special preparation. Schedule 10 and Schedule 40 can be ordered in black, or with hot-dip galvanizing, to meet FM/UL requirements for dry systems that meet the zinc coating specifications of ASTM A795 or A53. All Wheatland galvanized material is also UL Listed.

Product Marking

Each length of Wheatland fire sprinkler pipe is continuously stenciled to show the manufacturer, type of pipe, grade, size and length. Barcoding is acceptable as a supplementary identification method.

SCHEDULE 10 SPECIFICATIONS

NPS	NOM OD		NOM ID		NOMINAL WALL		NOMINAL WEIGHT		UL CRR*	PIECES Lift
	in.	mm	in.	mm	in.	mm	lbs./ft.	kg/m		
1¼	1.660	42.2	1.442	36.6	.109	2.77	1.81	2.69	7.3	61
1½	1.900	48.3	1.682	42.7	.109	2.77	2.09	3.11	5.8	61
2	2.375	60.3	2.157	54.8	.109	2.77	2.64	3.93	4.7	37
2½	2.875	73.0	2.635	66.9	.120	3.05	3.53	5.26	3.5	30
3	3.500	88.9	3.260	82.8	.120	3.05	4.34	6.46	2.6	19
4	4.500	114.3	4.260	108.2	.120	3.05	5.62	8.37	1.6	19
5	5.563	141.3	5.295	134.5	.134	3.40	7.78	11.58	1.5	13
6	6.625	168.3	6.357	161.5	.134	3.40	9.30	13.85	1.0	10
8	8.625	219.1	8.249	209.5	.188	4.78	16.96	25.26	2.1	7

* Calculated using Standard UL CRR formula, UL Fire Protection Directory, Category VIZY.
* The CRR is a ratio value used to measure the ability of a pipe to withstand corrosion. Threaded Schedule 40 steel pipe is used as the benchmark (value of 1.0).

SCHEDULE 40 SPECIFICATIONS

NPS	NOM OD		NOM ID		NOMINAL WALL		NOMINAL WEIGHT		UL CRR*	PIECES Lift
	in.	mm	in.	mm	in.	mm	lbs./ft.	kg/m		
1	1.315	33.4	1.049	26.6	.133	3.38	1.65	2.50	1.00	70
1¼	1.660	42.2	1.380	35.1	.140	3.56	2.27	3.39	1.00	51
1½	1.900	48.3	1.610	40.9	.145	3.68	2.72	4.05	1.00	44
2	2.375	60.3	2.067	52.5	.154	3.91	3.66	5.45	1.00	30

* Calculated using Standard UL CRR formula, UL Fire Protection Directory, Category VIZY.
* The CRR is a ratio value used to measure the ability of a pipe to withstand corrosion. Threaded Schedule 40 steel pipe is used as the benchmark (value of 1.0).



SUBMITTAL INFORMATION

PROJECT:

CONTRACTOR:

DATE:

ENGINEER:

SPECIFICATION REFERENCE:

SYSTEM TYPE:

LOCATIONS:

COMMENTS:

BLACK

HOT-DIP GALVANIZED

Wheatland Tube 700 South Dock Street Sharon, PA 16146
P 800.257.8182 | F 724.346.7260 | info@wheatland.com | wheatland.com

Wheatland Tube
JMC STEEL GROUP

MATERIAL SAFETY DATA SHEET

PIPE PAINT MARKER PT BROADLINE YELLOW FIBER POINT

SECTION I – PRODUCT INFORMATION

Distributor's name: Allied Rubber & Gasket Company
2610 Commerce Way
Vista, Ca 92081

In case of emergency: Contact your local poison control center
For information call: (800) 854-1015

Date prepared: November 2, 2010

Product name: Pipe Paint Marker PT Broadline Yellow Fiber Point

SECTION II – COMPOSITION INFORMATION ON INGREDIENTS

Ingredient	CAS No.	OSHA PEL	ACGIH-TLV	Recommended	%
Xylene	1330-20-7	TWA 100 ppm	TWA 100 ppm	No Data	45-55
1-Methoxy-2-Propano Acetate	108-65-6	No Data	No Data	No Data	25-35
Titanium Dioxide	13463-67-7	TWA 10mg/m3	TWA 10mg/m3	Nuisance dust	1-10
Ethyl Benzene	100-41-4	TWA 100 ppm	TWA 100 ppm	No Data	1-10
Diarylide Yellow	5468-75-7	No Data	No Data	No Data	1-10

SECTION III – HAZARDS IDENTIFICATION

DANGER! Harmful or fatal if swallowed. Flammable liquid. Keep away from heat and flames. Avoid eye contact. Use with adequate ventilation.

The Mighty Marker Paint marking pen contains from 4 to 20 ml of liquid. The liquid contents are only released in a controlled manner when the tip of the pen is pressed. No free liquid is present under normal conditions of use. This product presents only a minimal fire and exposure hazard.

HEALTH HAZARDS

INGESTION: Ingestion of significant amounts is extremely unlikely due to product form. Ingestion of liquid contents may cause vomiting.

EYES: Contact with the liquid contents may be mildly irritating to eyes. May cause redness and tearing.

SKIN: Prolonged and/or repeated contact with liquid contents may produce mild irritation.

INHALATION: Overexposure is very unlikely due to product form. High concentrations may cause nasal and respiratory conditions. Intentional abuse may be harmful or fatal

SECTION IV – FIRST AID MEASURES

INGESTION: Ingestion of significant amounts is extremely unlikely due to product form. DO NOT induce vomiting. Call physician.

EYE CONTACT: Flush thoroughly with water. Get medical attention if irritation persists.

SKIN CONTACT: Wash with soap and water. If irritation develops and persists, get medical attention.

INHALATION: Inhalation overexposure is very unlikely due to product form. If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

SECTION V – FIRE FIGHTING MEASURES

FLASH POINT: 76° F (TCC) ASTM D56

FLAMMABLE LIMITS: LEL 1.0 UEL 13.1

EXTINGUISHING MEDIA: Use water fog, dry chemical, carbon dioxide or foam

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE/EXPLOSION HAZARDS: The liquid content of the pen is flammable liquid; however, the pen contains a small amount of the liquid, and the contents are released only when pressure is applied to the tip.

SECTION VI – ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE: Large spill of this product are unlikely due to product form. If marking pen leaks, wipe up any free liquid, and place the pen and waste in an appropriate container for disposal. In storage where large numbers of pens may be damage, eliminate all sources of ignition, ventilate area and collect the pens into container for disposal. Collect any released liquid with an inert absorbent and place in a container for disposal.

SECTION VII – HANDLING AND STORAGE

HANDLING: Keep product away from open flame. Keep away from children. Replace cap on pen when not in use. Avoid contact with eyes. Avoid prolonged contact with skin.

STORAGE: Store away from heat and flame.

SECTION VIII – EXPOSURE CONTROL/PERSONAL PROTECTION

<u>Ingredient</u>	<u>ACGIH TLV (8-hr. TWA)</u>	<u>U.S. OSHA PEL (8-hr. TWA)</u>	<u>Ontario (Canada) TWA-EV</u>	<u>UK OEL (8-hr. TWA)</u>
Xylene	100 ppm 150 ppm STEL	100 ppm 150 ppm STEL	100 ppm (435 mg/m ³) 150 ppm (650 mg/m ³) STEV	100 ppm (441 mg/m ³) 150 ppm STEL, Skin
Ethylbenzene	100 ppm 125 ppm STEL	100 ppm 125 ppm STEL	100 ppm (435 mg/m ³) 125 ppm (540 mg/m ³) STEV	100 ppm (441 mg/m ³) 125 ppm (552 mg/m ³) STEL

EYE PROTECTION: None should be needed for normal use. Avoid eye contact.

SKIN PROTECTION: None should be needed for normal use. Avoid repeated or prolonged contact with skin. Wear impervious gloves if needed to prevent possible skin irritation.

RESPIRATORY PROTECTION: None should be needed for normal use.

VENTILATION: No special ventilation is normally required.

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	282°F	SPECIFIC GRAVITY:	>1 @ 70°F
SOLUBILITY IN WATER:	Insoluble	MELTING POINT:	No Data
VAPOR PRESSURE:	No Data	EVAPORATION RATE:	Less than one (1)
VAPOR DENSITY:	Greater than one (1)	pH:	No Data

SECTION X – STABILITY AND REACTIVITY

STABILITY: Stable

INCOMPATIBILITY: Strong oxidizing and reducing agents. Avoid heat and open flames.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide. Hazardous polymerization will not occur.

SECTION XI – TOXICOLOGICAL INFORMATION

Acute Toxicity Data

<u>Ingredient</u>	<u>LD50 Oral</u> <u>(mg/kg)</u>	<u>LD50 Dermal</u> <u>(mg/kg)</u>	<u>LC50 Inhalation</u> <u>(4 hrs.)</u>
Xylene	5 251 (mouse)	>1 700 (rabbit)	6 350 ppm (rat)
Ethylbenzene	3 500 (rat)	15 380 (rabbit)	4 000 ppm (rat)

Chronic Toxicity Data

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

<u>Ingredient</u>	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>
Xylene	A4	Group 3	Not Listed
Ethylbenzene	A3	Group 2B	Not Listed

ACGIH: (American Conference of Governmental Industrial Hygienists)

A3 – Confirmed animal carcinogen with unknown relevance to humans

A4 – Not Classifiable as a Human Carcinogen

IARC: (International Agency for Research on Cancer)

Group 2B – The agent is possibly carcinogenic to humans

Group 3 – The agent is not classifiable as to its carcinogenicity in humans.

NTP: (National Toxicity Programs)

Irritation:

Normal use of marker will not result in harmful effects. Xylene may be irritating to the skin.

Sensitization:

Not likely to cause sensitization.

Neurological Effects:

Not expected with normal use. Xylenes act as central nervous system depressants when ingested and inhaled.

Teratogenicity:

Not expected with normal use. Xylene is considered toxic to developing fetuses.

Reproductive Toxicity:

Not available.

Mutagenicity (Genetic Effects):

Not available.

Toxicologically Synergistic Materials:

Not available.

SECTION XII – ECOLOGICAL INFORMATION

No data is currently available

SECTION XIII – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Discard empty pen in trash. Dispose in accordance with federal, state and local regulations

SECTION XIV – TRANSPORT INFORMATION

Not meant to be all inclusive

Domestic Highway (Containers <1 Quart are ORM-D)

Proper Shipping Name: Consumer Commodity

Hazard Class/Subsidiary: ORM-D

UN/NA No.: None

Packing Group: None

Label Required: ORM-D

SECTION XV – REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Status: All ingredients in the product are listed on the TSCA inventory.

SARA Title III:

Sec. 302/304: None

Sec. 311/312: Flammable

Sec 313: Xylenes, Ethylbenzene

CERCLA RQ: Xylenes 100 lb., Ethylbenzene 1 000 lb.

California Prop 65:

This product contains the following chemical know to the State of California to cause cancer: Ethylbenzene

Canada

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

WHMIS Classification:

Not Controlled.

NSNR Status (New Substance

All ingredients in the product are listed, as required, on Canada's Domestic Substances List (DSL).

Notifications Regulations):

NPRI Substances (National

Pollutant Release Inventory):

Xylene, Ethylbenzene

Risk Phrases:

None

Safety Phrases:

S2: Keep out of reach of children.

SECTION XVI – OTHER INFORMATION

HMIS and NFPA Ratings: 2 (Health), 3 (Flammability), 0 (Reactivity), B (Personal Protection) (4=extreme, 3=high, 2=moderate, 1=slight, 0=least) (B=gloves & safety glasses).

Disclaimer

The information contained herein is accurate and reliable as of the date issued to the best of the manufacturer's knowledge. ARGCO doesn't warrant or guarantee its accuracy or reliability and shall not be liable for any loss or damage arising from the use thereof. It is the user's responsibility to satisfy itself that the information offered for its consideration is suitable for its particular use.

END OF MATERIAL SAFETY DATA SHEET



UTILITY ENTERPRISES, INC.
700 MAIN STREET, WESTBURY, NY 11590
(516) 997-6300 - FAX # (516) 997-6345

MATERIAL SAFETY DATA SHEET

FIRE & ICE MASTER GL48

FOR CHEMICAL EMERGENCY: Spill, Leak, Fire, Exposure, or Accident - Call **INFOTRAC** - Day or Night: **1-800-535-5053**
THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD) **IMPORTANT:** Read this MSDS before handling & disposing of this product. Pass this information on to employees, customers and users of this product.

PRODUCT IDENTIFICATION

DOT Shipping name: Cleaning compound, NOI. **CAS NO.:** MIXTURE
Chemical Description: 1,2,3-Propanetriol **UN/NA #:** N/A
DOT Hazard Class: Not considered as hazardous **DATE OF ISSUE:** 11/11

SECTION I - HAZARDOUS INGREDIENTS/EXPOSURE LIMITS

Hazardous Ingredients:	CAS #	TLV/PEL	AGENCY	TYPE	SARA-313(% Range)
NO HAZARDOUS INGREDIENTS					

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush eyes with plenty of water. Get medical attention if any sensations persist.
SKIN CONTACT: Wash off with plenty of water and soap.
INHALATION: (breathing) Remove to fresh air if effects occur. Consult a physician.
INGESTION: (swallowing) Remove material from mouth. Drink plenty of water. If large amount swallowed or symptoms develop get medical attention.

SECTION III - HEALTH HAZARDS / ROUTES OF ENTRY

EYE CONTACT: Can cause irritation.
SKIN CONTACT: Unlikely to be irritant.
INHALATION: (breathing) Not applicable at ambient temperature.
INGESTION: (swallowing) Unlikely to be harmful unless excessive amount swallowed.

SECTION IV - SPECIAL PROTECTION INFORMATION

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.
RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In misty atmospheres, use an approved mist respirator.
SKIN PROTECTION: Use gloves impervious to this material.
EYE PROTECTION: Use safety glasses. Safety glasses should be sufficient for most operations; however, for misty operations wear chemical goggles.
EXPOSURE GUIDELINE(S): TLV-TWA: 10 mg/m3 (mist)

SECTION V - REACTIVITY DATA

STABILITY: Stable
INCOMPATIBILITY: (materials to avoid) None
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may release acrolein.
HAZARDOUS POLYMERIZATION: Will not occur

SECTION VI - SPILL OR LEAK PROCEDURES

PRECAUTIONS IN CASE OF LEAK OR SPILL: Clean up spill with absorbent material
WASTE DISPOSAL METHOD: Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.



UTILITY ENTERPRISES, INC.
700 MAIN STREET, WESTBURY, NY 11590
(516) 997-6300 - FAX # (516) 997-6345

MATERIAL SAFETY DATA SHEET

FIRE & ICE MASTER GL48

SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS: No specific protective measures are required.

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Extinguish with water fog or fine spray, dry chemical, CO₂, or a universal type foam.

FIRE AND EXPLOSION HAZARD: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: aldehydes, carbon monoxide.

FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire area and deny unnecessary entry. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire.

SECTION IX - PHYSICAL DATA

APPROXIMATE BOILING POINT (DEG F):	>500	PER CENT VOLATILE:	0
SPECIFIC GRAVITY (68 F):	1.15	FLASH POINT (TCC, DEG F):	177 deg C (COC)
RELATIVE EVAPORATION RATE (ESTIMATED):	>1	PER CENT SOLUBILITY IN WATER:	100
VAPOR PRESSURE @20C mmHg (CALCULATED):	<0.1 hPa		

SECTION X - OTHER REGULATORY DATA

SARA

SECTION 302: NOT LISTED
SECTION 311 & 312: NOT LISTED
SECTION 313: NOT LISTED

HMIS

Health: 1
Flammability: 1
Reactivity: 0

TSCA

All components are in full compliance with the TSCA inventory.

CALIFORNIA PROPOSITION 65

NOT LISTED

RCRA

Waste material would be a D001

CERCLA

NOT LISTED

CARCINOGENICITY:

NOT LISTED with NTP or IARC.

NOTICE

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufactures and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.



UTILITY ENTERPRISES, INC.
700 MAIN STREET, WESTBURY, NY 11590
(516) 997-6300 - FAX # (516) 997-6345

MATERIAL SAFETY DATA SHEET

FIRE & ICE MASTER PG38

FOR CHEMICAL EMERGENCY: Spill, Leak, Fire, Exposure, or Accident - Call INFOTRAC - Day or Night: **1-800-535-5053**
THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD) IMPORTANT: Read this MSDS before handling & disposing of this product. Pass this information on to employees, customers and users of this product.

PRODUCT IDENTIFICATION

DOT Shipping name: PROPYLENE GLYCOL CAS NO.: MIXTURE
Chemical Family: GLYCOL UN/NA #: N/A
DOT Hazard Class: NONE DATE OF ISSUE: 11/11

SECTION I - HAZARDOUS INGREDIENTS/EXPOSURE LIMITS

Hazardous Ingredients:	CAS #	TLV/PEL	AGENCY	TYPE	SARA-313(% Range)
NO HAZARDOUS INGREDIENTS					

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush eyes with plenty of water.
SKIN CONTACT: Wash off in flowing water or shower.
INHALATION: (breathing) Remove to fresh air if effects occur. Consult a physician.
INGESTION: (swallowing) No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

SECTION III - HEALTH HAZARDS / ROUTES OF ENTRY

EYE CONTACT: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Mists may cause eye irritation.
SKIN CONTACT: Prolonged contact is essentially non-irritating to skin. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated exposures may cause flaking and softening of skin.
INHALATION: (breathing) At room temperature, vapors are minimal due to physical properties. Mists may cause irritation of upper respiratory tract.
INGESTION: (swallowing) Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.

SECTION IV - SPECIAL PROTECTION INFORMATION

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.
RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In misty atmospheres, use an approved mist respirator.
SKIN PROTECTION: Use gloves impervious to this material.
EYE PROTECTION: Use safety glasses. Safety glasses should be sufficient for most operations; however, for misty operations wear chemical goggles.
EXPOSURE GUIDELINE(S): Propylene glycol: AIHA WEEL is 50 ppm total, 10mg/m³ aerosol only.

SECTION V - REACTIVITY DATA

STABILITY: Stable
INCOMPATIBILITY: (materials to avoid) This product is incompatible with: *Oxidizing agents*.
HAZARDOUS DECOMPOSITION PRODUCTS: When available oxygen is limited, as in a fire or when heated to very high temperatures by hot wire or plate, carbon monoxide and other hazardous compounds such as aldehydes might be generated.
HAZARDOUS POLYMERIZATION: Will not occur

SECTION VI - SPILL OR LEAK PROCEDURES

PRECAUTIONS IN CASE OF LEAK OR SPILL: Clean up spill with absorbent material
WASTE DISPOSAL METHOD: Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.



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MATERIAL SAFETY DATA SHEET

FIRE & ICE MASTER PG38

SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS: Keep containers tightly closed when not in use.

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Extinguish with water fog or fine spray, dry chemical, CO₂, or a universal type foam.
FIRE AND EXPLOSION HAZARD: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: aldehydes, carbon monoxide.
FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire area and deny unnecessary entry. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire.

SECTION IX - PHYSICAL DATA

APPROXIMATE BOILING POINT (DEG F):	>500	PER CENT VOLATILE:	0
SPECIFIC GRAVITY (68 F):	1.036	FLASH POINT (TCC, DEG F):	471
RELATIVE EVAPORATION RATE (ESTIMATED):	>1	PER CENT SOLUBILITY IN WATER:	100
VAPOR PRESSURE @20C mmHg (CALCULATED):	<.1		

SECTION X - OTHER REGULATORY DATA

SARA

SECTION 302: NOT LISTED
SECTION 311 & 312: NOT LISTED
SECTION 313: See Section I.I

HMIS

Health: 0
 Flammability: 0
 Reactivity: 0

TSCA

All components are in full compliance with the TSCA inventory.

CALIFORNIA PROPOSITION 65

NOT LISTED

RCRA

Waste material would be a D001

CERCLA

NOT LISTED

CARCINOGENICITY:

NOT LISTED with NTP or IARC.

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THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD) **IMPORTANT:** Read this MSDS before handling & disposing of this product. Pass this information on to employees, customers and users of this product.

PRODUCT IDENTIFICATION

DOT Shipping name:	Cleaning compound, NOI.	CAS NO.: MIXTURE
Chemical Description:	1,2,3-Propanetriol	UN/NA #: N/A
DOT Hazard Class:	Not considered as hazardous	DATE OF ISSUE : 04/11

SECTION I - HAZARDOUS INGREDIENTS/EXPOSURE LIMITS

Hazardous Ingredients:	CAS #	TLV/PEL	AGENCY	TYPE	SARA-313(% Range)
NO HAZARDOUS INGREDIENTS					

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush eyes with plenty of water. Get medical attention if any sensations persist.
SKIN CONTACT: Wash off with plenty of water and soap.
INHALATION: (breathing) Remove to fresh air if effects occur. Consult a physician.
INGESTION: (swallowing) Remove material from mouth. Drink plenty of water. If large amount swallowed or symptoms develop get medical attention.

SECTION III - HEALTH HAZARDS / ROUTES OF ENTRY

EYE CONTACT: Can cause irritation.
SKIN CONTACT: Unlikely to be irritant.
INHALATION: (breathing) Not applicable at ambient temperature.
INGESTION: (swallowing) Unlikely to be harmful unless excessive amount swallowed.

SECTION IV - SPECIAL PROTECTION INFORMATION

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.
RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In misty atmospheres, use an approved mist respirator.
SKIN PROTECTION: Use gloves impervious to this material.
EYE PROTECTION: Use safety glasses. Safety glasses should be sufficient for most operations; however, for misty operations wear chemical goggles.
EXPOSURE GUIDELINE(S): TLV-TWA: 10 mg/m³ (mist)

SECTION V - REACTIVITY DATA

STABILITY: Stable
INCOMPATIBILITY: (materials to avoid) None
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may release acrolein.
HAZARDOUS POLYMERIZATION: Will not occur

SECTION VI - SPILL OR LEAK PROCEDURES

PRECAUTIONS IN CASE OF LEAK OR SPILL: Clean up spill with absorbent material
WASTE DISPOSAL METHOD: Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.



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MATERIAL SAFETY DATA SHEET

FIRE & ICE MASTER

SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS: No specific protective measures are required.

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Extinguish with water fog or fine spray, dry chemical, CO₂, or a universal type foam.
FIRE AND EXPLOSION HAZARD: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: aldehydes, carbon monoxide.
FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire area and deny unnecessary entry. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire.

SECTION IX - PHYSICAL DATA

APPROXIMATE BOILING POINT (DEG F):	>500	PER CENT VOLATILE:	0
SPECIFIC GRAVITY (68 F):	1.15	FLASH POINT (TCC, DEG F):	177 deg C (COG)
RELATIVE EVAPORATION RATE (ESTIMATED):	>1	PER CENT SOLUBILITY IN WATER:	100
VAPOR PRESSURE @20C mmHg (CALCULATED):	<0.1 hPa		

SECTION X - OTHER REGULATORY DATA

SARA

SECTION 302: NOT LISTED
SECTION 311 & 312: NOT LISTED
SECTION 313: NOT LISTED

HMIS

Health: 1
 Flammability: 1
 Reactivity: 0

TSCA

All components are in full compliance with the TSCA inventory.

CALIFORNIA PROPOSITION 65

NOT LISTED

RCRA

Waste material would be a D001

CERCLA

NOT LISTED

CARCINOGENICITY:

NOT LISTED with NTP or IARC.

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Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Scotch-Grip(TM) Rubber and Gasket Adhesive 847
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes
 Communication Markets Division
ADDRESS: 3M Center
 St. Paul, MN 55144-1000

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

Issue Date: 10/18/2005
Supersedes Date: 10/21/2003

Document Group: 10-2436-3

Product Use:

Specific Use: **Rubber & Gasket ADHESIVE**

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
ACETONE	67-64-1	60 - 70
ACRYLONITRILE-BUTADIENE POLYMER	9003-18-3	10 - 20
GLYCEROL ESTERS OF ROSIN ACIDS	8050-31-5	7 - 13
PHENOL-FORMALDEHYDE POLYMER	25085-50-1	5 - 10
SALICYLIC ACID	69-72-7	1 - 5
ZINC OXIDE	1314-13-2	<2
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	68411-46-1	<0.5

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Dark brown liquid; sharp solvent odor

General Physical Form: Liquid

Immediate health, physical, and environmental hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

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

Skin Contact:

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, and itching.

Inhalation:

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

May be absorbed following inhalation and cause target organ effects.

Ingestion:

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

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

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

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

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

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

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

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

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	<i>No Data Available</i>
Flash Point	0 °F [<i>Test Method:</i> Tagliabue Closed Cup]
Flammable Limits - LEL	2.6 %
Flammable Limits - UEL	12.8 %

5.2 EXTINGUISHING MEDIA

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

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Cover spill area with a fire-extinguishing foam. An aqueous film forming foam (AFFF) is recommended. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Collect as much of the spilled material as possible using non-sparking tools. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and MSDS. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

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

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Contents may be under pressure, open carefully. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. No smoking while handling this material. Avoid breathing of vapors, mists or spray. Avoid static discharge. Avoid eye contact with vapors, mists, or spray. Keep out of the reach of children. Vapors may ignite explosively. May cause flash fire. Prevent build-up of vapors - open all windows and doors. Maintain vapor concentrations below recommended exposure limits. Use only with cross-ventilation. Without adequate ventilation, vapors may settle in low-lying areas. Keep away from heat, sparks, and open flame. Do not smoke or ignite matches, lighters, etc. Avoid contact with oxidizing agents.

7.2 STORAGE

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

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use with appropriate local exhaust ventilation. Provide appropriate local exhaust ventilation on open containers. Do not use in a confined area or areas with little or no air movement. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact with vapors, mists, or spray.

The following eye protection(s) are recommended: Safety Glasses with side shields, Indirect Vented Goggles.

8.2.2 Skin Protection

Not applicable. Gloves are not required.

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

Gloves made from the following material(s) are recommended: Butyl Rubber, Polyethylene/Ethylene Vinyl Alcohol.

8.2.3 Respiratory Protection

Avoid breathing of vapors, mists or spray.

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

8.2.4 Prevention of Swallowing

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

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
ACETONE	ACGIH	TWA	500 ppm	Table A4
ACETONE	ACGIH	STEL	750 ppm	Table A4
ACETONE	OSHA	TWA, Vacated	750 ppm	
ACETONE	OSHA	TWA	1000 ppm	Table Z-1
ACETONE	OSHA	STEL, Vacated	1000 ppm	
ZINC OXIDE	ACGIH	TWA, respirable	2 mg/m ³	
ZINC OXIDE	ACGIH	STEL	10 mg/m ³	
ZINC OXIDE	OSHA	TWA, as fume	5 mg/m ³	Table Z-1
ZINC OXIDE	OSHA	TWA, respirable	5 mg/m ³	Table Z-1
ZINC OXIDE	OSHA	STEL, Vacated, as fume	10 mg/m ³	
ZINC OXIDE	OSHA	TWA, Vacated, as dust	10 mg/m ³	
ZINC OXIDE	OSHA	TWA, as total dust	15 mg/m ³	Table Z-1

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

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	Dark brown liquid; sharp solvent odor
General Physical Form:	Liquid
Autoignition temperature	<i>No Data Available</i>
Flash Point	0 °F [<i>Test Method:</i> Tagliabue Closed Cup]
Flammable Limits - LEL	2.6 %
Flammable Limits - UEL	12.8 %
Boiling point	132 °F [<i>Details:</i> CONDITIONS: (Acetone)]
Vapor Density	2 [<i>Ref Std:</i> AIR=1]
Vapor Pressure	180 mmHg [<i>Details:</i> CONDITIONS: @68F]
Specific Gravity	.91 [<i>Ref Std:</i> WATER=1]
pH	<i>No Data Available</i>
Melting point	<i>No Data Available</i>
Solubility in Water	Slight (less than 10%)
Evaporation rate	1.9 [<i>Ref Std:</i> ETHER=1]
Hazardous Air Pollutants	0 % weight [<i>Test Method:</i> Calculated]
Volatile Organic Compounds	0 g/l [<i>Test Method:</i> calculated per EPA method 24]
Percent volatile	64 % weight
VOC Less H₂O & Exempt Solvents	0 g/l [<i>Test Method:</i> calculated per EPA method 24]
Viscosity	Approximately 2750 centipoise

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Strong oxidizing agents

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Aldehydes	During Combustion
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Cyanide	During Combustion
Ketones	During Combustion
Oxides of Nitrogen	During Combustion
Oxides of Zinc	During Combustion

SECTION 11: TOXICOLOGICAL INFORMATION

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

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Reclaim solvent if feasible. Incinerate in a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

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

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

62-0847-0335-4, 62-0847-0635-7, 62-0847-2630-6, 62-0847-2631-4, 62-0847-2632-2, 62-0847-5530-5, 62-0847-6530-4, 62-0847-7530-3, 62-0847-8530-2, 62-0847-8535-1, 62-0847-9530-1, 62-0847-9531-9, 62-0847-9532-7, 62-0847-9535-0, 78-8032-2065-2, 78-8135-1201-5

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

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

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

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

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
ZINC OXIDE (ZINC COMPOUNDS)	1314-13-2	<2

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

<u>Ingredient (Category if applicable)</u>	<u>C.A.S. No</u>	<u>Regulation</u>	<u>Status</u>
ACETONE	67-64-1	Toxic Substances Control Act (TSCA) 4 Test Rule Chemicals	Applicable

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

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

All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

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

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 Flammability: 3 Reactivity: 0 Special Hazards: None

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

HMIS Hazard Classification

Health: 2 Flammability: 3 Reactivity: 0 Protection: X - See PPE section.

Hazardous Material Identification System (HMIS(r)) hazard ratings are designed to inform employees of chemical hazards in the workplace. These

ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS(r) ratings are to be used with a fully implemented HMIS(r) program. HMIS(r) is a registered mark of the National Paint and Coatings Association (NPCA).

Revision Changes:

Section 16: NFPA hazard classification heading was modified.
Section 16: HMIS hazard classification heading was modified.
Section 3: Other potential health effects heading was modified.
Copyright was modified.
Section 8: Exposure guidelines data source legend was modified.
Section 3: Immediate physical hazard(s) was modified.
Section 3: Potential effects from inhalation information was modified.
Section 3: Potential effects from ingestion information was modified.
Section 5: Fire fighting procedures information was modified.
Section 5: Unusual fire and explosion hazard information was modified.
Section 6: Release measures information was modified.
Section 7: Handling information was modified.
Section 7: Storage information was modified.
Section 8: Engineering controls information was modified.
Section 8: Eye/face protection phrase was modified.
Section 8: Skin protection phrase was modified.
Section 8: Prevention of swallowing information was modified.
Section 15: 311/312 hazard categories heading was modified.
Section 15: International regulations information was modified.
Section 15: State regulations information was modified.
Section 15: US federal regulations information was modified.
Section 4: First aid for ingestion (swallowing) - decontamination - was modified.
Section 4: First aid for ingestion (swallowing) - medical assistance - was modified.
Section 10: Hazardous polymerization heading was modified.
Section 15: TSCA section 12[b] text was modified.
Section 3: Other health effects information was modified.
Section 16: HMIS explanation was modified.
Section 16: NFPA explanation was modified.
Section 15: 311/312 Delayed Hazard score was modified.
Section 15: Inventories information was modified.
Section 15: EPCRA 313 text was modified.
Section 12: Ecotoxicological information heading was modified.
Section 12: Chemical fate information heading was modified.
Section 8: Exposure guidelines ingredient information was modified.
Section 8: Exposure guidelines legend was modified.
Section 1: Secondary Division name was modified.
Section 16: NFPA hazard classification for special hazards was modified.
Section 12: Ecotoxicological phrase was modified.
Section 12: Chemical Fate phrase was modified.
Section 2: Ingredient phrase was added.

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

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MATERIAL SAFETY DATA SHEET

FIRECODE® Compound, Ready Mixed

MSDS #61-380-002

Page 1 of 9

SECTION 1 CHEMICAL PRODUCT AND IDENTIFICATION

United States Gypsum Company
550 West Adams Street
Chicago, Illinois 60661-3637
A Subsidiary of USG Corporation

Product Safety: 1 (800) 507-8899
www.usg.com
Version Date: January 1, 2011
Version: 8

PRODUCT(S) FIRECODE® Compound, Ready Mixed

**CHEMICAL FAMILY /
GENERAL CATEGORY** Joint Treatment

SYNONYMS Joint Compound, Taping Compound, Mud

SECTION 2 HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:

⚠WARNING!

This product is not expected to produce any unusual hazards during normal use. Exposure to high dust levels may irritate the skin, eyes, nose, throat, or upper respiratory tract.

POTENTIAL HEALTH EFFECTS (See Section 11 for more information)

ACUTE :

Inhalation Exposure to dust generated during the handling or sanding of the product may cause temporary irritation to eyes, skin, nose, throat, and upper respiratory tract. Persons subjected to large amounts of this dust will be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation. Labored breathing may occur after excessive inhalation. If respiratory symptoms persist, consult physician.

Eyes Dust can cause temporary mechanical irritation of eyes. If burning, redness, itching, pain or other symptoms persist or develop, consult physician.

Skin None known.

Ingestion None known.

CHRONIC:

Inhalation Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing. Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of developing silicosis is dependent upon the exposure intensity and duration.

Eyes None known.

Skin None known.

Ingestion None known.

TARGET ORGANS: Eyes, skin and respiratory system.

PRIMARY ROUTES OF ENTRY: Inhalation, eyes and skin contact.



MATERIAL SAFETY DATA SHEET
FIRECODE® Compound, Ready Mixed

MSDS #61-380-002
Page 2 of 9

CARCINOGENICITY CLASSIFICATION OF INGREDIENT(S) All substances listed are associated with the nature of the raw materials used in the manufacture of this product and are not independent components of the product formulation. All substances, if present, are at levels well below regulatory limits. See Section 11: Toxicology Information for detailed information.

MATERIAL	IARC	NTP	ACGIH	CAL- 65
Vinyl Acetate Monomer	2B	Not Listed	A3	Not Listed
Acetaldehyde	2B	2	A3	Listed
Formaldehyde	1	2	A2	Listed
Crystalline silica	1	1	A2	Listed

IARC - International Agency for Research on Cancer: 1- Carcinogenic to humans; 2A – Probably carcinogenic to humans; 2B – Possibly carcinogenic to humans; 3 - Not classifiable as a carcinogen; 4 – Probably not a carcinogen

NTP – National Toxicology Program (Health and Human Services Dept., Public Health Service, NIH/NIEHS): 1- Known to be carcinogen; 2- Anticipated to be carcinogens

ACGIH – American Conference of Governmental Industrial Hygienists: A1 – Confirmed human carcinogen; A2 – Suspected human carcinogen; A3 – Animal carcinogen; A4 - Not classifiable as a carcinogen; A5 – Not suspected as a human carcinogen

CAL-65 – California Proposition 65 “Chemicals known to the State of California to Cause Cancer”

Respirable crystalline silica: IARC: Group 1 carcinogen, NTP: Known human carcinogen. The weight percent of crystalline silica given represents total quartz and not the respirable fraction. The weight percent of respirable silica has not been measured in this product.

Food and Drug Administration [CFR Title 21, v.3, sec 184.1409] – Ground limestone is Generally Recognized as Safe (GRAS).

POTENTIAL ENVIRONMENTAL EFFECTS: Toxicity studies performed with fish, aquatic invertebrates and aquatic plants showed no toxic effect. (See Section 12 for more information.)

SECTION 3
COMPOSITION, INFORMATION ON INGREDIENTS

MATERIAL	WT%	CAS #
Plaster of Paris (CaSO4•½H2O)	>35	26499-65-0
Water	>30	7732-18-5
Limestone	>15	1317-65-3
Attapulgate	<5	12174-11-7
Expanded Perlite	<5	93763-70-3
Vinyl Acetate Polymer	<5	9003-20-7
Or Ethylene Vinyl Acetate Polymer		24937-78-8
Cellulose	<5	9004-34-6
Crystalline Silica	<5	14808-60-7^

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory and the Canadian Domestic Substances List (DSL).

^The weight percent for silica represents total quartz and not the respirable fraction.

SECTION 4
FIRST AID MEASURES

FIRST AID PROCEDURES



MATERIAL SAFETY DATA SHEET
FIRECODE® Compound, Ready Mixed

MSDS #61-380-002
 Page 3 of 9

Inhalation	Remove to fresh air. Leave the area of exposure and remain away until coughing and other symptoms subside. Other measures are usually not necessary, however if conditions warrant, contact physician.
Eyes	In case of contact, do not rub or scratch your eyes. To prevent mechanical irritation, flush thoroughly with water for 15 minutes. If irritation persists, consult physician.
Skin	To prevent the drying effect of plaster of paris, wash with mild soap and water. A commercially available hand lotion may be used to treat dry skin areas. If skin has become cracked, take appropriate action to prevent infection and promote healing. If irritation persists, consult physician.
Ingestion	Plaster of paris hardens and, if ingested, may result in obstruction of the gut, especially the pyloric region. Drinking gelatin solutions or large volumes of water may delay setting.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma. Pre-existing skin diseases such as, but not limited to, rashes and dermatitis.

NOTES TO PHYSICIAN: Treatment should be directed at the control of symptoms and the clinical condition.

SECTION 5
FIRE FIGHTING MEASURES

General Fire Hazards	Not expected to burn.		
Extinguishing Media	Water or use extinguishing media appropriate for surrounding fire.		
Special Fire Fighting Procedures	Wear appropriate personal protective equipment. See section 8.		
Unusual Fire/ Explosion Hazards	None known		
Hazardous Combustion Products	Above 800° C – limestone may decompose to calcium oxide (CaO) and carbon dioxide (CO ₂). Above 175° C – polyvinyl acetate may decompose to H ₂ O, CO ₂ , CO, and acetic acid, could produce vinyl acetate monomers. Above 1450° C - decomposes to calcium oxide (CaO) and sulfur dioxide (SO ₂).		
Flash Point	Not Determined	Auto Ignition	Not Applicable
Method Used	Not Applicable	Flammability Classification	Not Applicable
Upper Flammable Limit (UFL)	Not Determined	Rate of Burning	Not Applicable
Lower Flammable Limit (LFL)	Not Determined		

SECTION 6
ACCIDENTAL RELEASE MEASURES

CONTAINMENT: No special precautions. Wear appropriate personal protective equipment. See section 8.

CLEAN-UP: Use normal clean up procedures. No special precautions.

DISPOSAL: Follow all local, state, provincial and federal regulations. Never discharge large releases directly into sewers or surface waters.



SECTION 7 HANDLING AND STORAGE

HANDLING: Avoid dust contact with eyes and skin. Wear the appropriate eye and skin protection against dust (See Section 8). Minimize dust generation and accumulation. Avoid breathing dust. Wear the appropriate respiratory protection against dust in poorly ventilated areas and if TLV is exceeded (see Sections 2 and 8). Use good safety and industrial hygiene practices.

STORAGE: Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities (see Section 10). As a dry powder, dew point conditions or other conditions causing presence of liquid will harden plaster of paris during storage. Do not use if material has spoiled, i.e., there is a moldy appearance or an unpleasant odor. Close container and discard properly. Keep tightly sealed following use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

MATERIAL	WT%	TLV (mg/m ³)	PEL (mg/m ³)
Plaster of Paris (CaSO ₄ •½H ₂ O)	>35	10	15 (T) / 5 (R)
Water	>30	(NE)	(NE)
Limestone	>15	10	15 (T) / 5 (R)
Attapulgite	<5	(NE)	(NE)
Expanded Perlite	<5	10	15 (T) / 5 (R)
Vinyl Acetate Polymer	<5	(NE)	(NE)
Or Ethylene Vinyl Acetate Polymer		(NE)	(NE)
Cellulose	<5	10	15 (T) / 5 (R)
Crystalline Silica	<5	0.025 (R)	0.1 (R)

(T)–Total; (R)–Respirable; (NE)–Not Established; (C)–Ceiling; (STEL)–Short-term exposure limit

(F)–Fume; (Du)–Dust; (M)–Mist

ppm–part per million; f/cc–fiber per cubic centimeter; mppcf– million particles per cubic foot

ENGINEERING CONTROLS: Provide ventilation sufficient to control airborne dust levels. If user operations generate airborne dust, use ventilation to keep dust concentrations below permissible exposure limits. Where general ventilation is inadequate, use process enclosures, local exhaust ventilation, or other engineering controls to control dust levels below permissible exposure limits.

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA-approved respirator equipped with particulate cartridges when dusty in poorly ventilated areas, and if TLV is exceeded. A respiratory program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. If engineering controls are not possible, wear a properly fitted NIOSH/MSHA-approved particulate respirator.

OTHER PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face	Wear eye protection, safety glasses or goggles, to avoid possible eye contact.
Skin	Wear gloves and protective clothing to prevent repeated or prolonged skin contact.
General	Selection of Personal Protective Equipment will depend on environmental working conditions and operations.



MATERIAL SAFETY DATA SHEET

FIRECODE® Compound, Ready Mixed

MSDS #61-380-002

Page 5 of 9

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Off white	Vapor Density (Air = 1)	< 1 (same as water)
Odor	Low to no odor	Specific Gravity (H ₂ O = 1)	1.3 - 1.7
Odor Threshold	Not Determined	Solubility in water (g/100g)	Unlimited dispersibility
Physical State	Paste	Partition Coefficient	Not Determined
pH @ 25 ° C	~ 7-8.5	Auto-ignition Temp	Not Determined
Melting Point	Not Applicable	Decomposition Temp	Not Determined
Freezing Point	32°F/ 0°C	Viscosity	Not Determined
Boiling Point	212°F/ 100°C	Particle Size	99% Finer than 250 microns
Flash Point	Not Determined	Bulk Density	1.3-1.7 kg/L
Evaporation Rate (BuAc = 1)	Not Determined	Molecular Weight	Mixture
Upper Flammable Limit (UFL)	Not Determined	VOC Content	<2 g/L
Lower Flammable Limit (LFL)	Not Determined	Percent Volatile	20-45
Vapor Pressure (mm Hg)	~24 mmHg@ 25°C		

SECTION 10 CHEMICAL STABILITY AND REACTIVITY

STABILITY	Stable.
CONDITIONS TO AVOID	Contact with acids, water, high humidity. High temperatures cause decomposition (see below). DNPH, commonly used to determine formaldehyde concentrations, will react with this product resulting in formaldehyde formation. Thus formaldehyde may be reported as higher than actual and in error.
INCOMPATIBILITY	Acids. Exposure to water and acids must be supervised because the reactions are vigorous and produce large amounts of heat.
HAZARDOUS POLYMERIZATION	None known.
HAZARDOUS DECOMPOSITION	Above 800° C – limestone may decompose to calcium oxide (CaO) and carbon dioxide (CO ₂). Above 175° C – polyvinyl acetate may decompose to H ₂ O, CO ₂ , CO, and acetic acid, could produce vinyl acetate monomers. Above 1450° C - calcium oxide (CaO) and sulfur dioxide (SO ₂).

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE EFFECTS: The acute oral toxicity study [OECD TG 420] of calcium sulfate dihydrate showed that this chemical did not cause any changes even at 2,000 mg/kg b.w. Therefore, the oral LD50 value was more than 2,000-mg/kg b.w. for female rats. Gypsum paste applied experimentally to the eyes of rabbits was not an irritant. Gypsum



dust particulate has shown an irritant action on mucous membranes of the respiratory tract and eyes. The sulfate ion has caused gastro-intestinal disturbance in humans following large oral doses. Limited studies involving the repeated inhalation of an (unspecified) calcium sulfate failed to identify any particular target organs in monkeys, rats and hamsters. No evidence of mutagenicity was found in Ames bacterial tests.

CHRONIC EFFECTS / CARCINOGENICITY:

There is no vinyl acetate/acetaldehyde/formaldehyde added to this product: Ethylene vinyl acetate polymer is a common emulsion polymer most familiar as the component of ordinary white glue which exhibits the "sticky" characteristic. Ethylene vinyl acetate polymer is not classified as a carcinogen by IARC, NTP or ACGIH. Trace amounts of residual vinyl acetate monomers, acetaldehyde and formaldehyde may be associated with the production of ethylene vinyl acetate polymer. Any exposure to vinyl acetate monomer, acetaldehyde, or formaldehyde is expected to remain well below OSHA regulatory and ACGIH recommended limits during normal handling and use of this product.

Plaster of Paris: Testing of dust from USG plaster of paris has not detected respirable crystalline silica.

Industrial hygiene measurement for exposures to formaldehyde cannot use 2,4-dinitrophenylhydrazine (DNPH) in sample collection or during analysis due to reaction with an ingredient in this product that will produce formaldehyde. Sample results will show higher concentrations of formaldehyde than actually exist employing DNPH anywhere in the analytical method. Previous standard IH sampling measurement using DNPH have shown formaldehyde exposure concentrations well below 8 hour time weighted average occupational exposure standards including the DNPH error.

Crystalline Silica: Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing. The weight percent of respirable crystalline silica may not have been measured in this product. Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. Smoking in combination with silica exposures increases the risk of cancer. The risk of developing silicosis is dependent upon the exposure intensity and duration.

In June, 1997, IARC classified crystalline silica (quartz and cristobalite) as a human carcinogen. In making the overall evaluation, the IARC Working Group noted that carcinogenicity in humans was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.

IARC states that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1).

**SECTION 12
ECOLOGICAL INFORMATION**

ENVIRONMENTAL TOXICITY: This product has no known adverse effect on ecology. Toxicity studies performed with fish, aquatic invertebrates and aquatic plants showed no toxic effect.

Ecotoxicity value	Not determined.
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**SECTION 13
DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL METHOD: Dispose of material in accordance with federal, state, and local regulations. Never discharge directly into sewers or surface waters. Consult with environmental regulatory agencies for guidance on acceptable disposal practices. Slurry may plug drains. Trace amounts of residue can be flushed to a drain, using plenty of water.



MATERIAL SAFETY DATA SHEET
FIRECODE® Compound, Ready Mixed

MSDS #61-380-002
 Page 7 of 9

SECTION 14
TRANSPORT INFORMATION

U.S. DOT INFORMATION: Not a hazardous material per DOT shipping requirements. Not classified or regulated.

Shipping Name	Same as product name.
Hazard Class	Not classified.
UN/NA #	None. Not classified.
Packing Group	None.
Label (s) Required	Not applicable.
GGVSec/MDG-Code	Not classified.
ICAO/IATA-DGR	Not applicable.
RID/ADR	None.
ADNR	None.

SECTION 15
REGULATORY INFORMATION

UNITED STATES REGULATIONS

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory.

MATERIAL	WT%	3 0 2	3 0 4	3 1 3	CERCLA	CAA Sec. 112	RCRA Code
Plaster of Paris (CaSO4•½H2O)	>35	NL	NL	NL	NL	NL	NL
Water	>30	NL	NL	NL	NL	NL	NL
Limestone	>15	NL	NL	NL	NL	NL	NL
Attapulgite	<5	NL	NL	NL	NL	NL	NL
Expanded Perlite	<5	NL	NL	NL	NL	NL	NL
Vinyl Acetate Polymer	<5	NL	NL	NL	NL	NL	NL
Or Ethylene Vinyl Acetate Polymer	<5	NL	NL	NL	NL	NL	NL
Cellulose	<5	NL	NL	NL	NL	NL	NL
Crystalline Silica	<5	NL	NL	NL	NL	NL	NL

Key: NL = Not Listed

SARA Title III Section 302 (EPCRA) Extremely Hazardous Substances: Threshold Planning Quantity (TPQ)

SARA Title III Section 304 (EPCRA) Extremely Hazardous Substances: Reportable Quantity (RQ)

SARA Title III Section 313 (EPCRA) Toxic Chemicals: X= Subject to reporting under section 313

CERCLA Hazardous Substances: Reportable Quantity (RQ)

CAA Section 112 (r) Regulated Chemicals for Accidental Release Prevention: Threshold Quantities(TQ)

RCRA Hazardous Waste: RCRA hazardous waste code



MATERIAL SAFETY DATA SHEET

FIRECODE® Compound, Ready Mixed

MSDS #61-380-002
Page 8 of 9

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of Controlled Product regulations and the MSDS contains all the information required by the Controlled Products Regulations. All ingredients of this product are included in the Canadian Domestic Substances List (DSL).

MATERIAL	WT%	IDL Item #	WHMIS Classification
Plaster of Paris (CaSO4•½H2O)	>35	Not Listed	Not Listed
Water	>30	Not Listed	Not Listed
Limestone	>15	Not Listed	D2A
Attapulgite	<5	Not Listed	Not Listed
Expanded Perlite	<5	Not Listed	D2A
Vinyl Acetate Polymer	<5	Not Listed	Not Listed
Or Ethylene Vinyl Acetate Polymer		Not Listed	Not Listed
Cellulose	<5	Not Listed	Not Listed
Crystalline Silica	<5	1406	D2A

IDL Item#: Canadian Hazardous Products Act – Ingredient Disclosure List Item #

WHMIS Classification: Workplace Hazardous Material Information System

Risk and Safety Phrases defined by European Union Directive 67/548/EEC (Annex III and IV)

R-Phrase(s): R36/37/38

S-Phrase(s): S51 S38 S39

SECTION 16 OTHER INFORMATION

Label Information

Δ WARNING!

When mixed with water, this material hardens and becomes very hot sometimes quickly. DO NOT attempt to make a cast enclosing any part of the body using this material. Failure to follow these instructions can cause severe burns that may require surgical removal of affected tissue or amputation of limb. Dust generated from sanding product can cause irritation to eyes, skin and respiratory tract. Use wet-sanding to reduce dust created. Wear eye, skin and respiratory protection as necessary per working conditions. If eye contact occurs flush with water for 15 minutes. Do not ingest. If ingested, call physician. Product safety information: 800-507-8899 or usg.com. Customer Service: 800 USG-4-YOU (800 874-4968). KEEP OUT OF REACH OF CHILDREN.

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings:		HMIS Ratings:	<table border="1"> <tr> <td>HEALTH</td> <td>*</td> <td>1</td> </tr> <tr> <td>FLAMMABILITY</td> <td></td> <td>0</td> </tr> <tr> <td>PHYSICAL HAZARD</td> <td></td> <td>0</td> </tr> <tr> <td>PERSONAL PROTECTION</td> <td></td> <td>E</td> </tr> </table>	HEALTH	*	1	FLAMMABILITY		0	PHYSICAL HAZARD		0	PERSONAL PROTECTION		E	0 = Minimal Hazard
HEALTH		*		1												
FLAMMABILITY				0												
PHYSICAL HAZARD				0												
PERSONAL PROTECTION		E														
Health: 1	Health: 1	1 = Slight Hazard														
Fire: 0	Fire: 0	2 = Moderate Hazard														
Reactivity: 0	Reactivity: 0	3 = Serious Hazard														
			4 = Severe Hazard													

E – Safety glasses, gloves and dust respirator; * - Contains silica

Key/Legend

ANSI American National Standards Institute



MATERIAL SAFETY DATA SHEET

FIRECODE® Compound, Ready Mixed

MSDS #61-380-002

Page 9 of 9

ACGIH	American Conference of Governmental Industrial Hygienists
CAA	Clean Air Act
CAS	Chemical Abstracts Service (Registry Number)
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
DOT	United States Department of Transportation
DSL	Canadian Domestic Substances List
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning & Community Right-to-know Act
HMS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
MSHA	Mine Safety and Health Administration
NDSL	Canadian Non-Domestic Substances List
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
PPE	Personal Protection Equipment
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act of 1986
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
UN/NA#	United Nations/North America number
WHMIS	Workplace Hazardous Material Information System

Prepared by:
Product Safety
USG Corporation
550 West Adams Street
Chicago, IL 60661-3637

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his/her own particular use.

END



BULLDOG
CHEMICALS LLC

Material Safety Data Sheet

Tuff-Lube

Date Prepared: 2/12/2007

Section I - Product and Company Identification

- Product Name: Tuff-Lube
- Formula: Polyether polyol, CAS#009082-00-2, 99+%
- Supplier: Bulldog Chemicals
29030 Lake Houston Lane
Huffman, TX 77336
Emergency Telephone: 281-360-7315

Section II – Physical and Chemical Properties

- Vapor Density: n/a
- Solubility in Water: Slight soluble to completely soluble
- Specific Gravity: 1.050-1.130 @ 25C°
- Boiling Point: Decomposes at elevated temperatures
- Appearance: Viscous liquid
- Vapor Pressure: NIL
- Odor: Slight odor

Section III – Fire and Explosion Data

- Flash Point: 430 F°, 221 C°
- Method Used: ASTM D93.PMMC
- Extinguishing Media: Water fog, CO2, dry chemical
- Fire and Explosion Hazards: Will support combustion. Do not breathe smoke when burning.
- Protective Equipment for Fire Fighters: Wear positive pressure self-contained breathing apparatus. (SCBA)

Section IV – DOT Information

- Proper Shipping Name: Tuff-Lube
- Hazard Class: Not regulated by DOT when shipped domestically by land.

Section V – Handling and Storage:

- Special Precautions: Materials not considered hazardous as handled in most industrial operations. Exercise reasonable care and cleanliness. Avoid skin and eye contact. Avoid breathing vapors if generated.



Tuff-Lube

Section VI – Health Hazard Data

- Eye: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely.
- Skin Contact: Essentially nonirritating to skin.
- Skin Absorption: A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.
- Ingestion: Single dose oral toxicity is considered to be low.
- Inhalation: Vapors are minimal due to the physical properties.
- Systemic Effects: Repeated exposures are NOT anticipated to cause any significant adverse effects.

Section VII – Emergency and First Aid Procedures

- Inhalation: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.
- Eye or Skin Contact: Skin should be washed in flossing water of shower. Irrigate eyes immediately with water for at least 5 minutes.
- Ingestion: Induce vomiting if large amounts are ingested. Consult medical personnel.

Section VIII – Special Protection Information

- Ventilation: Good general ventilation should be sufficient.
- Respiratory Protection: No respiratory protection should be needed.
- Eye Protection: Use safety glasses.
- Skin protection: No precautions other than clean body-covering clothing should be needed.

Section IX– Reactivity Data

- Stability: Stable under recommended storage conditions.
- Incompatibility: Oxidizing materials and strong acids.
- Hazardous Decomposition: Complete combustion will result in Carbon Dioxide and water may decompose in heat/fire releasing product of possible greater hazard.
- Hazardous Polymerization: Will not occur.

Section X – Spill or Leak Procedure

- Waste Disposal Method: Burn in an approved incinerator according to Federal, State and Local regulations.
- Cleanup: Spills should be collected to prevent contamination of waterways. Spills may also be a slipping hazard.



MATERIAL SAFETY DATA SHEET

SECTION 1. PRODUCT IDENTIFICATION
--

MATERIAL NAME: CPVC PIPE AND FITTINGS

PRODUCT USE: Hot and cold water, sprinkler systems

MANUFACTURER/SUPPLIER: IPEX INC.
 Port of Montreal Building
 Wing 3, First Floor
 Cité-du-Havre
 Montréal (Québec) Canada
 H3C 3R5

TELEPHONE: (514) 861-7221

SECTION 2: PREPARATION INFORMATION

PREPARED BY: André Battistin **TELEPHONE NO:** (514) 861-7221

DATE: April 8, 1999

SECTION 3: HAZARDOUS INGREDIENTS

Ingredient Name

CPVC compound (cubes, pellets, granules and/or powder)

CAS Registry No.

Not applicable to mixtures. Contains CPVC resin: CAS number 68648-82-8

<u>Ingredient Name</u>	<u>Percent*</u>	<u>UN, NA or CAS Number</u>	<u>LD₅₀/LC₅₀ / (Species/Route)</u>
Dibutyltin diisooctyl mercapto acetate	1-10%	25168-24-5	Oral LD ₅₀ : ≅1100 mg/kg (rat)** Dermal LD ₅₀ : ≅6800 mg/kg (rabbit)**

* Typical amount - not a specification

** For similar tin compounds, not specifically dibutyltin diisooctyl mercapto acetate

SECTION 4. PHYSICAL DATA

<u>PHYSICAL STATE:</u>	Solid	<u>SPECIFIC GRAVITY:</u>	1.4 - 1.65
<u>ODOUR AND APPEARANCE:</u>	White, orange or gray; odorless		
<u>BOILING POINT:</u>	Not Applicable		
<u>NOT APPLICABLE:</u>	FREEZING POINT, ODOR THRESHOLD, VAPOUR PRESSURE, VAPOUR DENSITY, EVAPORATION RATE, pH, COEFFICIENT OF WATER/OIL DISTRIBUTION		

SECTION 5. FIRE OR EXPLOSION HAZARD

<u>Flash Point/Method Used</u>	<u>Auto-ignition Temp</u>	<u>Flammable Limits (% by volume)</u>
See Conditions of Flammability	Not Determined	Lower: See Explosion Data Upper: See Explosion Data

Conditions of Flammability

Flash-ignition temperature: $\cong 480^{\circ}\text{C}$ (Estimated result). Flash-ignition is the lowest initial temperature of air passing around the specimen at which sufficient combustible gas is evolved to be ignited by a small external pilot flame.

Extinguishing Media

Water, ABC dry chemical, AFFF, and protein type air foams. CPVC compounds are "ordinary combustibles" (NEPA defined Class A). Carbon dioxide is not generally recommended for use on Class A fires as a lack of cooling capacity may result in reignition.

Special Firefighting Procedures

- Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode or other positive-pressure mode and protective clothing. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic gases from combustion, burning, or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.
- Run off water from firefighting may have corrosive effects.

Explosion Data: Not Available

Hazardous Combustion Products

- Irritating or toxic substances will be emitted upon combustion, burning, or decomposition. Smoke from burning CPVC will be very irritating.
- Thermal decomposition, combustion, or pyrolysis may emit CO, CO₂, hydrogen chloride, organotins, hydrocarbons. Other possible emissions: not determined.
- Hydrogen chloride, a combustion/decomposition product of CPVC, has a corrosive effect on many metals. Affected equipment surfaces and unprotected structural elements of buildings should be washed with a detergent based water solution to remove corrosive deposits as soon as possible after depositions have occurred.

<u>Potential Combustion Product</u>	<u>ACGIH TLV-TWA/C/STEL</u>	<u>OSHA PEL/C</u>
Carbon monoxide	TWA 25 ppm	TWA 35 ppm; C 200 ppm ² PEL 50 ppm ¹
Dibutyltin diisooctyl mercapto acetate (as Sn)	TWA 0.1 mg/m ³ skin STEL 0.2 mg/m ³ skin	PEL 0.1 mg/m ³ ¹ TWA 0.1 mg/m ³ skin ²
Hydrogen chloride	STEL/C 5 ppm	PEL/C 5 ppm ¹ C 5ppm ²

Notes:

- ACGIH TLV-TWA: Threshold Limit Value - Time Weighted Average for concentration of the chemical substance in the ambient workplace air for a normal 8-hour workday, 40-hour workweek, to which nearly all workers may be repeatedly exposed without adverse effect. American Conference of Governmental Industrial Hygienists, 1995/1996 Edition.
- OSHA PEL: OSHA (USA) Permissible Exposure Limit, 8-hour TWA, 29CFR1910.1000
- "C" Means Ceiling Limit.
- STEL: Short Term Exposure Limit, 15-minute TWA
- The "skin" notation calls attention to the skin as an additional significant route of absorption of the listed chemical.

1 Table Z-1 values

2 Table Z-1-A values

SECTION 6. REACTIVITY DATA

Unstable Conditions

Overheating causes decomposition

Hazardous Polymerization

Will not occur

Incompatible Substances

Avoid contact with acetal, acetal copolymers and amine containing materials during processing. If processed together, these materials may be mutually destructive and degrade rapidly. Prevent cross contamination of feedstocks. Thoroughly purge and mechanically clean processing equipment to prevent these materials from coming in contact with each other. Refer to technical service reports for specific equipment and procedural recommendations.

Hazardous Decomposition Products

See "Hazardous Combustion Products"

SECTION 7. TOXICOLOGICAL PROPERTIES
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Sensitization

None known

Irritancy

See "Acute and Chronic Health Effects"

Carcinogenicity

None known

Reproductive Effects

None known

Routes of entry

Skin contact

Skin absorption

Eye contact*

Ingestion*

Inhalation, acute**

Inhalation, chronic**

* Powder compound.

** Processing vapors.

Exposure Limits

Cubes, granules or pellets:

None established.

Powder compound:

Dust/powder: None established. Use 10 mg/m³ as a guide.

Dibutyltin diisooctyl mercapto acetate: 0.1 mg/m³ (as Sn)

Acute and Chronic Health Effects

- None known or expected from product at ambient temperature. All components are physically bound in the matrix during our manufacturing process and are not expected to create an exposure to individual components when the product is handled, processed, and used in accordance with good manufacturing and industrial hygiene practice and by following the guidelines in this bulletin.
- Eye contact: when cutting may contain components which may cause immediate or delayed eye irritation. The onset of irritation may not occur until several hours after exposure.
- Skin contact: when cutting may contain components which may cause effects such as reddening, swelling, irritation, and dermatitis. The onset of symptoms may not occur until several hours after exposure. Organotins can be absorbed through the skin causing effects such as reddening, swelling, irritation, and ataxia (inability to coordinate body or muscular movements), hypersensitivity, and shaking.
- Inhalation: when cutting, may contain components which may cause effects such as irritation of the nose, throat, respiratory tract and lungs. May cause nausea, headache, dizziness, lung damage, vomiting, dry throat, and abdominal pain.
- Ingestion: when cutting may contain components which may cause effects such as depression, eye and nasal discharge, stomach and intestinal irritation, and diarrhea.
 - Molten product causes skin burns.
 - At elevated temperatures (e.g., processing temperature), this product may emit fumes and vapors that are irritating to the respiratory tract, eyes and/or skin of sensitive people. The concentration and composition of vapors will depend upon variables such as processing method and temperature. The potential for acute and/or chronic health effects will depend on the effectiveness of exhaust ventilation provided to the process area.
 - Symptoms such as (but not limited to) coughing, tearing, and irritation must be regarded as potentially hazardous and measures taken to avoid exposure.
 - Smoke from burning CPVC will be very irritating. Decomposition or combustion products cause irritation, possibly severe, to the eyes, respiratory tract, and skin. From any decomposing or burning material, overexposure may cause serious injury or even cause death.

Note: Hydrogen chloride is detectable by its sharp pungent odor in concentrations as low as 1-5 ppm. Low concentrations (below 50 ppm) are not harmful in short-term exposures but do provide excellent warning properties by causing coughing or irritation. Because the protective response is so strong, humans rarely submit to damaging concentrations – instead, there is an unmistakable urge to leave the area. Repeated or prolonged exposure to high concentrations can cause eye and respiratory damage.

Thermal Processing Emissions (extrusion, molding, etc.)

Potential melt processing emissions have not been fully determined. Volatiles (fumes, vapors and odors) from start up before processing, melt processing, and equipment break down/cleanup after melt processing are expected to be the primary hazard in an occupational setting. Trace amounts of organic tin compounds (less than 0.1 mg/m³) may be present in the ambient workplace atmosphere from melt processing. Trace amounts of carbon tetrachloride and chloroform are possible. If decomposition occurs in processing equipment due to hang up or stagnation, Hydrogen chloride is generated. Conduct any operation emitting fumes or vapors under well-ventilated conditions.

Potential Vapour / <u>Processing Emission</u>	<u>ACGIH TLV-TWA/C/STEL</u>	<u>OSHA PEL/C</u>
Hydrogen chloride	STEL/C 5 ppm	PEL/C 5 ppm (Table z-1) C 5 ppm (Table Z-1-A)
Organotin compd. (as Sn)	TWA 0.1 mg/m ³ skin STEL 0.2 mg/m ³ skin	PEL 0.1 mg/m ³ (Tbl Z1) TWA 0.1 mg/m ³ skin (Tbl Z1A)

Emergency and First Aid Procedure/General Advice

If irritation or other symptoms as noted above occur or persist from any route of exposure, remove the affected individual from the area; see a physician/get medical attention.

- Eye contact: Treat as any foreign particulate matter in the eye.
- Skin Contact: For contact with powder (dust), wash the affected area with plenty of soap and water. If molten polymer contacts skin, cool the skin rapidly with water or ice. See a physician for removal of any adhering material and treatment of burn.
- Vapor Inhalation: (melt processing vapors or decomposition products): Remove the affected individual to fresh air. Provide protection before allowing reentry.
- Dust Inhalation: Remove the affected individual to fresh air. Provide protection before allowing reentry.
- Ingestion: For ingestion of powder (dust), rinse mouth with water. Drink plenty of water to cause dilution in the stomach. Induce vomiting by sticking finger down throat or by giving Syrup of Ipecac. Call a physician at once. Never give anything by mouth to an unconscious person.

SECTION 8. PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT TO BE USED:

When cutting, the use of eye protection and a NIOSH-approved respirator for dust is recommended.

ENGINEERING CONTROLS TO BE USED:

Ventilate adequately when cutting.

WASTE DISPOSAL:

Handle in accordance with federal, state, provincial and municipal regulations.

PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL:

Pipe fragments and debris should be swept up and removed to a disposal container.

HANDLING PROCEDURES AND EQUIPMENT

- General Considerations: Conduct any operation emitting fumes or vapors under well-ventilated conditions. Ensure well-ventilated conditions by methods such as local mechanical exhaust ventilation, as necessary, during equipment start up and during operations such as hot melt processing (extruding, molding, etc.), cutting, regrinding, heat welding, soldering, and break down and cleanup of equipment after melt processing; and/or any other melt processing or pre/post-processing operation involving heat sufficient to result in fumes or vapors, or in product breakdown. Avoid continued, prolonged, and/or repeated breathing of fumes or vapors. Do not inhale, ingest, taste, swallow, or chew this product. Wash thoroughly after processing, especially before eating, smoking or using toilet facilities. Do not store or consume food in processing areas. Do not use processing equipment to heat food.

- Equipment Start Up/Cleanup: Equipment start up and break down/cleanup following normal melt processing always must be performed under well-ventilated conditions. CPVC compound may be held at process temperatures for a short time without significant decomposition. However, recognize that CPVC compounds are designed for continuous processing and that exposure to either prolonged elevated temperature or excessive heat history (time) will result in decomposition. Melt processing equipment must not be shut down for extended periods of time with compound in it or decomposition will occur leading to irritating and/or toxic emissions as well as to possible corrosion of unprotected metal from HCl. For equipment shutdown at melt temperatures (typically inferior or equal to 200-225°C), we recommend the use of a purge compound such as acrylic or general purpose ABS (do not use flame-retarded or halogen-containing grades). In case of a power or other mishap, dismantling of the die assembly should begin immediately.

STORAGE REQUIREMENTS: None

SPECIAL SHIPPING INFORMATION: Not applicable

SECTION 9. FIRST AID MEASURES

SPECIFIC FIRST AID MEASURES: No situation is likely to arise from routine handling or CPVC pipes.

INHALATION: If irritation persists, consult a physician

SKIN: Wash with soap and water

EYES: Remove particles with clean water. If irritation persists, consult a physician.

INGESTION: Do not induce vomiting; consult a physician.

SECTION 10. ADDITIONAL GENERAL INFORMATION

Disclaimer

The information contained in this material safety data sheet is based on information available to IPEX Inc. and is believed to be accurate. Where this information is based on data developed by third parties, IPEX Inc. expressly denies liability. IPEX Inc. makes no warranty, expressed or implied, regarding the accuracy of this information or data or the results obtained from its use. All recommendations are made without guarantee, since the conditions of use of this product are beyond IPEX Inc.'s control. IPEX Inc. assumes no responsibility for any damages resulting from the use of this product described herein.

Please consult IPEX Inc. for further information.



Material Safety Data Sheet

PVC & CPVC Pipe & Fittings

Date Issued: MAR 2011

SECTION I

Manufacturer's Name: Spears® Manufacturing Company

Telephone Number: (818) 364-1611

Address: 15853 Olden St., Sylmar, CA 91342

Chemical Family: Ethene, chloro-(homopolymer and chlorinated)

Formula: Mixture of PVC or CPVC polymer with functional additives.

Chemical Name/Synonyms: Polyvinyl chloride, PVC and chlorinated polyvinyl chloride CPVC.

NFPA 7041: Health: 2 / Flammability: 1 / Reactivity: 0 / Special: None

HMIS²: Health: 0 / Flammability: 1 / Reactivity: 0

Hazard Code Key: 0 = Insignificant; 1 = Slight; 2 = Moderate; 3 = High; 4 = Extreme, ¹National Fire Protection Ass'n., ²National Paint and Coatings Ass'n.

SECTION II – HAZARDOUS INGREDIENTS

All ingredients are bound-up in the manufacturing process and are not expected to create any hazard in handling or use. Finished goods (e.g., rigid pipe, bar stock, duct, angle, or profile) are inert.

SECTION III – PHYSICAL DATA (Typical data, not specifications)

Boiling Point: Not applicable (NA)

Specific Gravity: (H₂O = 1) 1.35-1.55

% Volatile by Weight: NA

Vapor Pressure: (mm Hg) NA

pH: NA

Melting Point: NA

Solubility in Water: Insoluble

Vapor Density: (Air = 1) NA

Particle Size: NA

Appearance and Odor: Rigid pipe, bar stock, duct, angle, or profile.
No odor.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flashpoint: Not applicable to solid products

Ignition Temperature:

PVC: >730°F (>388°C) CPVC: >830°F (>433°C)

Flammable Limits in Air: (% by volume) Lower: NA Upper: NA

Extinguishing Media: Water. ABC dry chemical. AFFF. Protein type air foams. Carbon Dioxide may be ineffective on larger fires due to a lack of cooling capacity, which may result in re-ignition.

Special Firefighting Procedure: Wear positive pressure self-contained breathing apparatus (SCBA). Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic combustion gases from any source. In enclosed or poorly ventilated areas, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

Unusual Fire and Explosion Hazards: None known.

SECTION V – HEALTH HAZARD DATA

Threshold Limit Value: None established.

Effects of Overexposure: There are no significant health hazards from vinyl compound at ambient temperature. Inhalation of decomposition or combustion products, especially hydrogen chloride, will cause irritation of the respiratory tract, eyes and skin. Depending on the severity of exposure, physiological response will be coughing, pain and inflammation. Individuals with bronchial asthma and other types of chronic obstructive respiratory diseases may develop bronchial spasms if exposure is prolonged.

Emergency and First Aid Procedure: If irritation persists from exposure to decomposition products, remove the affected individual from the area. Provide protection before reentry.

SECTION VI – REACTIVITY DATA

Stability: Stable

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products: CO, CO₂, hydrogen chloride, and small amounts of benzene and aromatic and aliphatic hydrocarbons. CPVC may also contribute small amounts of chloroform and carbon tetrachloride.

Incompatibility (materials to avoid): Refer to Spears® Chemical Resistance Guide for chemical resistance information about Spears® thermoplastic pipe and fittings.

SECTION VII – SPILL OR LEAK PROCEDURE

Steps to be taken in case material is released or spilled: Material is inert. Place into a container for reuse or disposal.

Waste Disposal Method: Dispose of waste in accordance with federal, state and local regulations. For waste disposal purposes these products are not defined or designated as hazardous by current provisions of the Federal Resources Conservation and Recovery Act (RCRA) 40CFR261.

SECTION VIII – SPECIAL PROTECTION INFORMATION

Ventilation: Provide efficient exhaust at all operations capable of creating fumes or vapors. Cutting or sawing, machining, heat welding, thermoforming and other operations involving heat sufficient to result in degradation should be examined to ensure adequate ventilation.

Respiratory Protection: Not normally required. If overheating results in decomposition resulting in smoke or fumes, a NIOSH/MSHA approved combination high efficiency particulate filter with organic vapor cartridge can be used. Gross decomposition may require the use of a positive pressure self-contained breathing apparatus.

Protective Equipment: Wear safety glasses.

SECTION IX – SPECIAL PRECAUTIONS

Certain operations, such as the installation of piping systems, may require the use of solvent cements. The user must obtain and comply with all safety precautions recommended by solvent cement manufacturers. Avoid continued or prolonged breathing vapors produced by overheating.

SECTION X – TRANSPORTATION

For domestic transportation purposes, these products are not defined or designated as a hazardous material by the U.S. Department of Transportation under Title 49 of the Code of Federal Regulations, 1983 Edition.

- DOT Proper Shipping Name: Not applicable
- DOT Hazard Class: Not hazardous
- DOT Label: None required
- UN/NA Hazard No.: Not applicable

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user.

JOB SITE LADDERS: ACCIDENT AREAS OR STEPS TO SAFETY?

Ladders present a continual safety hazard. Follow these simple rules to avoid accidents, lost time and extra expense.
The basics of ladder safety: by J.F. Smith, Mgr. of Comm. Products, Patent Scaffolding Co.

GENERAL PRACTICE:

- * Check out every ladder, every time it arrives at any job site.
- * Take any damaged or defective ladder out of service immediately.
- * Develop a periodic ladder tune-up program. Tighten all nuts, bolts, or other fastenings. Oil moving parts such as spreaders, pulley hinges, locks. Replace safety feet regularly.
- * Employ only top craftsmen and manufacturer-supplied parts for ladder repair.
- * Always confine ladder use to level surfaces. Be sure to equip ladders with non-slip bases or safety feet.
- * Teach workers safe practices like facing the ladder when ascending or descending, keeping their weight centered, and avoiding lateral leaning.
- * Make sure all steps or rungs are free of grease, oil, paint, or other slippery substances.
- * Be sure ladders placed in work paths have ample warning of their presence.
- Remember that metal or wet wooden ladders are electrical conductors. And always provide temporary insulation for any exposed electrical fixtures at the site and near ladders.
- * Never allow more than one man on a ladder at any one time unless you are employing a special two-man unit.
- * Never use a ladder in the horizontal position. Get a platform stage if needed.
- * Store ladders in cool, dry ventilated spots. If laid flat, provide supports to prevent sagging or bowing. Wood ladders should have a 15% moisture content. Scrap any water-soaked ones.
- * Never load-test ladders. There is no satisfactory way, and over-stressing during a test may provide permanent damage. Confine checks to visible inspection.
- * Be sure your ladders are Type I, and are so labeled or stamped. As defined by UL, ANSI, and OSHA, these have a 250 lb. duty rating for 4 to 20 ft. lengths.
- * Support any ladders being carried on cars or truck to prevent sagging. And tie them securely to avoid chaffing and the effects of road shocks.
- * Make sure job-built ladders have one piece rails. Never splice sectional. Good practice also suggest use of separate ladders for ascent and descent.

Ladders should be coated with suitable protective materials according to ANSI and OSHA. Linseed or penta are preferred coatings.

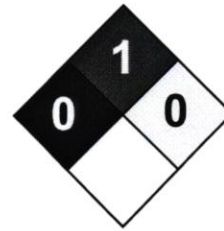
EXTENSION LADDERS:

- * Be sure such ladders have non-slip bases or safety shoes, and that these are bolted, riveted, or otherwise adequately secured.
- * Keep rung spacing at 12 in., c-c.
- * Make sure ladder locks act positively.
- * Hold minimum overlap to 3 ft. for 16 to 36 ft. ladders; 4 ft. for 40 to 48 ft.; 5 ft for 52 to 60 ft.
- * Be sure that rope is 5/16 in. minimum and has a breaking strength of at least 560 lb.
- * Make sure that an extended ladder's length is four times its distance from the wall to the base or about 75 degrees.
- * Where possible, lash extension ladders securely at the top.
- * Never adjust extension ladders at the top, or while someone is standing on them. Be sure, when adjusting them from the bottom, that all locks are in view and engaged. Adjust the top section first on three-section ladders.
- * If ladder hooks are used at the top be sure that these are bolted to side rails.
- * Never allow a man to stand on the top three rungs.
- * If the ladder is used for access, make sure that its top extends at least 3 ft. above the floor or platform at the top.

STEP LADDERS:

- * Always inspect steps carefully—they are the first point of failure.
- * Next, inspect back rungs.
- * Finally, check out rails—particularly at the bottom.
- * Never allow a man to stand on the bucket shelf if it's only designed for about 25 lbs.
- * Make sure that both spreaders are fully opened.
- * Never allow anyone to stand on the top level, or on the highest step, of a step ladder. Get a larger one if the man can't reach.
- * Make sure that the step spacing is 12 in., c-c.

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Health	2
Fire	1
Reactivity	0
Personal Protection	H

Material Safety Data Sheet Propylene glycol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Propylene glycol

Catalog Codes: SLP1162, SLP2974

CAS#: 57-55-6

RTECS: TY2000000

TSCA: TSCA 8(b) inventory: Propylene glycol

CI#: Not applicable.

Synonym: 1,2,-propanediol, 1,2-dihydroxypropane

Chemical Name: Propylene Glycol

Chemical Formula: CH₃CHOHCH₂OH

Contact Information:

Sciencelab.com, Inc.

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Propylene glycol	57-55-6	100

Toxicological Data on Ingredients: Propylene glycol: ORAL (LD50): Acute: 20000 mg/kg [Rat]. 22000 mg/kg [Mouse]. DERMAL (LD50): Acute: 20800 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of inhalation.

Potential Chronic Health Effects:

Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 371°C (699.8°F)

Flash Points: CLOSED CUP: 99°C (210.2°F). OPEN CUP: 107°C (224.6°F) (Cleveland).

Flammable Limits: LOWER: 2.6% UPPER: 12.5%

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of heat.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: When heated to decomposition it emits acrid smoke and irritating fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis, moisture.

Storage:

Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 23°C (73.4°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:

Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 10 (mg/m³) from AIHA Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid. (Oily liquid.)

Odor: Practically Odorless.

Taste: Practically Tasteless.

Molecular Weight: 76.1g/mole

Color: Colorless. Clear

pH (1% soln/water): Not available.

Boiling Point: 188°C (370.4°F)

Melting Point: -59°C (-74.2°F)

Critical Temperature: Not available.

Specific Gravity: 1.036 (Water = 1)

Vapor Pressure:

0 kPa (@ 20°C) 0.08 mmHg at 20 C 0.129 mmHg at 25 C

Vapor Density: 2.62 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -0.9

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility: Soluble in cold water, hot water, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, excess heat, exposure to moist air or water

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Hygroscopic; keep container tightly closed. Incompatible with chloroformates, strong acids (nitric acid, hydrofluoric acid), caustics, aliphatic amines, isocyanates, strong oxidizers, acid anhydrides, silver nitrate, reducing agents.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact.

Toxicity to Animals:

Acute oral toxicity (LD50): 18500 mg/kg [Rabbit]. Acute dermal toxicity (LD50): 20800 mg/kg [Rabbit].

Chronic Effects on Humans: May cause damage to the following organs: central nervous system (CNS).

Other Toxic Effects on Humans:

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May affect genetic material (mutagenic). May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: May cause mild skin irritation. It may be absorbed through the skin and cause systemic effects similar to those of ingestion. Eyes: May cause mild eye irritation with some immediate, transitory stinging, lacrimation, blepharospasm, and mild transient conjunctival hyperemia. There is no residual discomfort or injury once it is washed away. Inhalation: May cause respiratory tract irritation. Ingestion: It may cause gastrointestinal tract irritation. It may affect behavior/central nervous system(CNS depression, general anesthetic, convulsions, seizures, somnolence, stupor, muscle contraction or spasticity, coma), brain (changes in surface EEG), metabolism, blood (intravascular hemolysis, white blood cells - decreased neutrophil function), respiration (respiratory stimulation, chronic pulmonary edema, cyanosis), cardiovascular system(hypotension, bradycardia, arrhythmias, cardiac arrest), endocrine system (hypoglycemia), urinary system (kidneys), and liver. Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may cause allergic contact dermatitis. Ingestion: Prolonged or repeated ingestion may cause hyperglycemia and may affect behavior/CNS (symptoms similar to that of acute ingestion). Inhalation: Prolonged or repeated inhalation may affect behavior/CNS (with symptoms similar to ingestion), and spleen

Section 12: Ecological Information

Ecotoxicity:

Ecotoxicity in water (LC50): >5000 mg/l 24 hours [Goldfish]. >10000 mg/l 48 hours [guppy]. >10000 mg/l 48 hours [water flea].

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information**Federal and State Regulations:**

Pennsylvania RTK: Propylene glycol Minnesota: Propylene glycol TSCA 8(b) inventory: Propylene glycol

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

R21/22- Harmful in contact with skin and if swallowed. S24/25- Avoid contact with skin and eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

Section 16: Other Information**References:**

-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -SAX, N.I. Dangerous Properties of Industrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Supplier MSDS -LOLI -RTECS -HSDB

Other Special Considerations: Not available.

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MATERIAL SAFETY DATA SHEET

HMIS CODES:

H	F	R	P
2	1	0	0

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administrator
(Non-Mandatory Form)
Form Approved OMB No. 1218-0072

IDENTITY (AS USED ON LABEL AND LIST): 100% RTV CLEAR SILICONE ADHESIVE SEALANT	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.
SIC	

Section I

Manufacturer's Name: J.C. WHITLAM MANUFACTURING COMPANY	Emergency Telephone Number: (330) 334 - 2524
Address (Number, Street, City, State, and ZIP Code): 200 WEST WALNUT STREET	Telephone Number for Information: (330) 334 - 2524
P.O. BOX 380 WADSWORTH, OHIO 44282-0380	Date Prepared: March 9, 2010 Signature of Preparer (optional):

Section II - Hazardous Ingredients/Identity Information

HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY: COMMON NAME(S))	OSHA PEL	ACGIH TLV	OTHER LIMITS Recommended	% (optional)
METHYLTRIACTOXYMILANE (CAS#4253-34-3)	TWA 10 ppm	TWA 10 ppm	OSHA STEL: 15 ppm	0.3
ETHYLTRIACTOXYMILANE (CAS#17689-77-9)	TWA 10 ppm	TWA 10 ppm	OSHA STEL: 15 ppm	0-3

Section III - Physical/Chemical Characteristics

Boiling Point:	N/A	Specific Gravity (H ₂ O = 1):	.98
Vapor Pressure (at 77°F/25°C)	< 5 mm	Melting Point:	N/A
Vapor Density (AIR = 1):	N/A	Evaporation Rate (Butyl Acetate = 1):	N/A

Solubility in Water: < 0.1

Appearance and Odor: CLEAR PASTE, ACETIC ACID ODOR

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used): 212°F/100°C (OPEN CUP)	Flammable Limits:	LEL: N/D	UEL: N/D
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Extinguishing Media: ON LARGE SCALE FIRES USE DRY CHEMICAL FOAM OR WATER SPRAY. ON SMALL FIRES USE CARBON DIOXIDE (CO₂), DRY CHEMICAL OR WATER SPRAY.

Special Fire Fighting Procedures: SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING SHOULD BE WORN IN FIGHTING LARGE FIRES INVOLVING CHEMICALS.

Unusual Fire and Explosion Hazards: NONE KNOWN

Section V - Reactivity Data		100% RTV CLEAR SILICONE ADHESIVE SEALANT		SIC
Stability:	Unstable:		Conditions to Avoid: EXPOSURE TO AIR OR MOISTURE UNTIL READY TO USE.	
	Stable:	X		

Incompatibility (Materials to Avoid): OXIDIZING MATERIAL CAN CAUSE A REACTION. WATER, MOISTURE, OR HUMID AIR CAN CAUSE HAZARDOUS VAPORS TO FORM.

Hazardous Decomposition or Byproducts: SILICON DIOXIDE, CARBON OXIDES, FORMALDEHYDE, AND TRACES OF INCOMPLETELY BURNED CARBON COMPOUNDS.

Hazardous Polymerization:	May Occur:		Conditions to Avoid: N/A
	Will Not Occur:	X	

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation? YES	Skin? YES	Ingestion? YES
Health Hazards (Acute and Chronic): NONE KNOWN			
Carcinogenicity:	NTP? NO	IARC Monographs? NO	OSHA Regulated? NO

Signs and Symptoms of Exposure: INGESTION: LOW INGESTION HAZARD IN NORMAL USE.
 SKIN CONTACT: UNCURED PRODUCT MAY CAUSE MODERATE IRRITATION.
 EYE CONTACT: UNCURED PRODUCT CONTACT IRRITATES EYES.
 INHALATION: IRRITATES RESPIRATORY PASSAGES VERY SLIGHTLY.

Medical Conditions Generally Aggravated by Exposure: NONE KNOWN

Emergency and First Aid Procedures:
 EYES: FLUSH WITH WATER FOR 15 MINUTES. OBTAIN MEDICAL ATTENTION.
 SKIN: WIPE OFF AND FLUSH WITH WATER. IF IRRITATION DEVELOPS GET MEDICAL ATTENTION.
 INHALATION: NO FIRST AID SHOULD BE NEEDED.
 ORAL: NO FIRST AID IS NEEDED.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled: REMOVE PRODUCT AND USE ABSORBENT MATERIAL TO TAKE CARE OF ANY OIL-LIKE RESIDUES.

Waste Disposal Method: REVIEW ALL LOCAL, STATE AND FEDERAL REGULATIONS CONCERNING HEALTH AND POLLUTION TO DETERMINE APPROVED DISPOSAL METHOD.

Precautions to Be Taken in Handling and Storing: USE REASONABLE CARE. STORE AWAY FROM OXIDIZING MATERIALS, WATER OR MOISTURE.

Other Precautions: PRODUCT FORMS ACETIC ACID WHEN EXPOSED TO WATER OR HUMID AIR. PROVIDE VENTILATION DURING USE TO CONTROL ACETIC ACID EXPOSURE WITHIN 10 ppm (CURRENT TLV) OR USE RESPIRATORY PROTECTION.

Section VIII - Control Measures

Respiratory Protection (Specify Type): ACID GAS/ORGANIC VAPOR TYPE

Ventilation:	Local Exhaust: RECOMMENDED	Special: N/A
	Mechanical (General): RECOMMENDED	Other: N/A
Protective Gloves: RUBBER OR PLASTIC GLOVES	Eye Protection: SAFETY GLASSES	

Other Protective Clothing or Equipment: NONE

Work/Hygienic Practices: GROSS AMOUNTS OF MATERIAL SHOULD BE REMOVED FROM THE SKIN AS SOON AS PRACTICAL, ESPECIALLY BEFORE EATING OR SMOKING.