HAZARD COMMUNICATION PROGRAM / SDSs

FOR

LICENSED **BONDED** **INSURED**

UPDATED Jan. 2016

HACI MECHANICAL CONTRACTORS, INC | 2108 W. SHANGRI-LA ROAD PHOENIX, ARIZONA 85029-4812
(P) 602.944.1555 | (F) 602.678.0266 | WWW.HACIMECHANICAL.COM

ROC104397 ROC104169 ROC104170 ROC104171 ROC104172 ROC257478 ROC247905

INDEX

TAB	DESCRIPTION
6	Concord Pipe Joint Lubricant
	Gruvlok Xtreme Temperature Lubricant
	P-70 PVC Primer
	Rain-R-Shine PVC Cement – Oatey
	RectorSeal No. 5 Pipe Thread Sealant
	RectorSeal T Plus 2 Pipe Thread Sealant
	Teflon Pipe Tape
	Weld-On 771 Low VOC Pipe Cement for ABS Plastic Pipe
7	3M Fire Barrier
	Firetemp Firestop
	3M Duct Tape
	Acoustical Backing Board (Fiber Glass Insulation/Insulation Board – Faced Products)
	Armaflex Insulation
	Rigid Duct Liners
	Insulating Foam Sealant (Latex)
	Part A Insulating Expanding Polyurethane Foam
	Part B Insulating Expanding Polyurethane Foam
8	AOC692 Alka-brite Plus
	AOC712 CalClean HD
	Degreasing Solvent
	Propylene Glycol
	Formula 409
	Gas Leak Detector
	Pax-Solv hand cleaner
	Windex
9	Acetone
	Paint Thinner
	Inverted marking Paint – Aerosol
	Diesel Fuel
	Lubricating Fluid (Mobil DTE 25)
	Hercules Dark Cutting Oil
	Premalube Red Aerosol
	Rustlick Oil
	Tractor Hydraulic Fluid
	Unleaded Gasoline
	WD-40
	Asphalt Emulsion Blacktop Sealer
	Fibered Roof and Foundation Coating

10 Items on jobsite not listed above - Add here: _____

_____

_____

_____

_____

CONTACT Andy Cutrona – Safety Coordinator (602 722-2372) for ANY SDS not in this HAZCOM book.

MATERIAL SAFETY DATA SHEET

SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: CONCORD PIPE JOINT LUBRICANT **C.A.S. #:** N/A

Chemical Name: N/A **Chemical Family:** Non-Petroleum Lubricant

SEACORD CORPORATION
1700 FEDERAL STREET
CAMDEN, NJ 08105

Emergency Phone #: 856-966-0440 **Information Phone #:** 856-966-0440

SECTION II: COMPOSITION, INGREDIENT INFORMATION

Chemical Name	C.A.S. #	OSHA PEL	ACGIH TLV
Diethylene Glycol	111-46-6	Not established.	None established.

SECTION III: HAZARDS IDENTIFICATION

Emergency Overview: Non-toxic, basically non-hazardous.
Eye Contact: May cause slight irritation.
Skin Contact: May cause slight irritation to persons sensitive to soap products.
Inhalation: Non-hazardous by inhalation.
Ingestion: Unlikely to occur.

SECTION IV: FIRST AID MEASURES

Note to Physician: Treat as soap irritation.
Eyes: Flush with water for 15 minutes, if irritation persists get medical aid.
Skin: Wash with soap and water, if irritation persists get medical aid.
Inhalation: Non-hazardous by inhalation.
Ingestion: Unlikely to occur.

SECTION V: FIREFIGHTING MEASURES

Flash Point: None
Flammable Limits: N/A
Extinguishing Media: N/A
Firefighting Procedures: N/A

SECTION VI: ACCIDENTAL RELEASE MEASURES

Directions: Wipe up with paper towels or cloth and place in appropriate containers for disposal. Material is non-hazardous waste.

SECTION VII: HANDLING AND STORAGE

Storage Temperature: Ambient
Handling: No special handling or storage procedures required.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: None required.
Engineering Controls: None required.
Protective Clothing: None required.
Gloves: Recommended to prevent possible dermal irritation.
Safety Glasses: Recommended to prevent possible eye irritation.

(Continued on next page.)

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N/A
Melting Point: N/A
Flash Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Specific Gravity: 1.06
Water Solubility: Appreciable
Physical Form: Paste

SECTION X: STABILITY AND REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur.
Conditions to Avoid: None.
Materials to Avoid: None
Hazardous Decomposition or By-Products: None known.

SECTION XI: TOXICOLOGICAL INFORMATION

Product is non-toxic.

SECTION XII: ECOLOGICAL DATA

No data available at this time.

SECTION XIII: DISPOSAL CONSIDERATIONS

In accordance with federal, state, and local regulations.

SECTION XIV: TRANSPORTATION INFORMATION

Product is not regulated.

SECTION XV: REGULATORY INFORMATION

OSHA Status: The component, diethylene glycol, is a"hazardous chemical" as defined by OSHA Hazard Communication Standard, 29 CFR, 1910.1200.
TSCA Status: All ingredients listed.
CERCLA: Not reportable.
SARA Title III: No reportable ingredients.
Sections 302, 311, 312, 313: No reportable ingredients.
RCRA Status: Not regulated.

SECTION XVI: OTHER INFORMATION

HMIS		
Health	0	0 = Minimal
Fire	0	1 = Slight
Reactivity	0	2 = Moderate
PP	B	3 = Serious
		4 = Severe

The above information and recommendations are believed to be accurate and reliable. However, no warranties, either expressed or implied with respect to the product or information herein are made. Users must make their own determination as to the suitability of the product for their purposes prior to use.

Revision Date:3/31/00

Tribology, Inc./Tech-Lube

GRUVLOK XTREME TEMPERATURE LUBRICANT

Material Safety Data Sheet

I. Product and Supplier Information

Product Name: **GRUVLOK XTREME TEMPERATURE LUBRICANT**

MSDS: GRUVLOK XTREME TEMP LUBE
Publication Date: July 2006
Revised: Nov. 2010

Product Synonyms: Gasket grease
Chemical Family or Formula Polydimethylsiloxane Mixture

Manufacturer: Tribology, Inc./Tech-Lube
35 Old Dock Road
Yaphank, New York 11980-9702 USA
Phone: **631-345-3000**
Fax: **631-345-3001**
Email: info@tribology.com
Website: www.tribology.com

Product Information: 631-345-3000
Transportation Emergency: 631-345-3000

Note: The purpose of this MSDS is to provide safe handling, shipping and disposal information for users of the product. It is not intended to, nor does it, provide complete or extensive toxicological data on the product or its components. Users who require this information are referred to primary suppliers of the ingredients of interest.

II. Composition and Information on Ingredients

Component Name	CAS #	Concentration
Polydimethylsiloxane	83148-62-9	> 70%
Fumed Silica	112945-52-5	< 20 %
Polytetrafluoroethylene	9002-84-0	< 5 %

III. Hazards Identification

OSHA Hazard Classification: No warning statements required.

Routes of Entry: Inhalation, skin contact, ingestion

Chemical Interactions: Avoid contact with all oxidizing agents, strong acids and bases.

IV. First Aid & Effects Of Overexposure

Inhalation:

Not an expected route of entry.
Remove individual to fresh air. If not breathing, give artificial respiration or oxygen as appropriate. Keep patient warm. Seek immediate medical advice.
Overexposure may cause irritation of the mucous membranes and repsiratory tract.

Skin Contact:

Flush skin thoroughly with soap and water. Rinse thoroughly. Seek medical advice if contact was extensive and irritation deveopes.Overexposure: extended periods of contact with skin can lead to irritation and dermatitis.

Eyes:

Immediately flush eyes with plenty of water while holding eyelids apart. Seek immediate medical advice.
Exposure to eyes may cause redness, irritation, discomfort or tearing.

Ingestion:

Do not induce vomitting.
Seek immediate medical advice. Never give anything by mouth to an unconscious person.
Symptoms may include: Headache, dizziness, nausea, intestinal disorders and unconsciousness.
Not an expected route of entry. Ingestion may cause abdominal pains, cramping, nausea and vomitting.

V. Fire Fighting Measures

Flammability Summary:

Heavy Grease Flash Point: 275 C/ 526 F

Fire/Explosion Hazards:

This material is not considered a potential fire and explosion hazard under normal operating conditions.

Extinguishing Media:

Foam, dry chemical or CO2. Water spray may be used to cool containers.
Do not allow contaminated water to enter sewers or waterways.

Fire Fighting Instructions:

In case of fire, use normal fire fighting equipment including a NIOSH approved self-contained breathing breathing apparatus (SCBA). Use water to cool containers.

VI. Accidental Release Measures

Personal Protection for Emergency Situations:

Evacuate the area of all unnecessary personnel. Eliminate any ignition sources until the area is determined to be free from explosion and fire hazards. Contain the release and eliminate its source if this can be done safely. Wear protective clothing. Keep unprotected persons away from spill.

Spill Mitigation Procedures

Air Release:

Low volatility makes this hazard unlikely.
Provide adequate ventilation. Keep away from ignition sources.

Water Release:

Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.
Notify all downstream users of possible contamination. Keep away from ignition sources.
Do not flush to sewer! US regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of stipulated quantities. US Coast Guard National Response Center is 800-424-8802.

Land Release:

Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Decontaminate all clothing and the spill area using a detergent and flush with large amounts of water. Contain all contaminated water for disposal and/or treatment.

Additional Spill Information:

Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section XIII, Disposal Considerations.

VII. Handling and Storage

Handling:

Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash with soap and water.

Storage

Keep container tightly closed. Store in a cool area away from ignition sources and oxidizers.
No special precautions need be taken if product is handled according to directions.

VIII. Exposure Controls and Personal Protection

Ventilation:

Local exhaust ventilation or other engineering controls are normally NOT necessary when handling or using this product. General exhaust ventilation is usually sufficient for general worker safety and comfort.
Explosion proof motors and fans are not required for unheated handling.

Respirator Type(s):

Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.

Skin: Wear impervious gloves (butyl rubber, Viton, e.g.) to avoid skin contact. Follow good industrial hygiene practices.
Eyes: Use chemical safety glasses with side shields, safety goggles and/or a full face shield where splashing is possible
Protective Clothing Type: Impervious

IX. Physical and Chemical Data

Physical State:	Grease
Color:	White
Odor:	Odorless

Explosive limits:

No data. Low volatility makes ambient explosive vapor concentrations impossible.

Molecular Weight:	Not applicable to mixtures	Vapor Density (Air = 1):	No data
pH (@ 25 Deg. C):	Not applicable	Vapor Pressure: (@ 20 Deg. C):	< 1
Octanol/Water Coeff:	No data	Evaporation Rate (Estimated):	< 1
Solubility in Water:	Insoluble	Flash Point, (TCC, Deg.F)(Estimated)	275 C / 526 F
Bulk Density:	Not applicable	Volatiles % by vol.:	negligible
Specific Gravity (68 Deg.F):	0. 88	Approximate Boiling Point (deg.F):	N/A

X. Stability and Reactivity

Stability and Reactivity Summary:
Stable under normal conditions.
Reactive Properties:

Sensitivity to mechanical shock:	None
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Ignition sources, open flames.
Chemical Incompatibility:	Strong acids or bases.
Incompatible materials:	No data available

Hazardous Decomposition Products: On combustion forms: Carbon Oxides
Decomposition Temperature: No data
Product May Be Unstable At Temperatures Above: No data

XI. Toxicological Information

Component Animal Toxicology

Oral LD50 value:	No data
Dermal LD50 value:	No data
Inhalation LC50 value:	No data
Product Animal Toxicit	No data

Skin Irritation:
This material is expected to be slightly irritating to the skin and mucous membranes.
Eye Irritation:
This material is expected to be irritating.
Reproductive and Developmental Toxicity:
No reproductive or developmental risk to humans is expected from exposure to this product.
Component Data:
All data refer to finished product
Mutagenicity:
Not known or reported to be mutagenic.
Carcinogenicity:
This chemical is not known or reported to be carcinogenic by any reference source including IARC, EPA OSHA, NTP, or ACGIH.

XII. Ecological Information

Ecological Toxicity Values:
Do not allow this material to be released to the environment without appropriate governmental permits.
Environmental fate: No information found
Environmental Toxicity No information found

XIII. Disposal Considerations

Consult current local, state and national regulations to ensure proper disposal.
Waste Disposal Summary:
Product as made does not qualify as an "Unlisted Hazardous Waste" for disposal situations.

Disposal Methods:
Dispose of in accordance with local, state and federal regulations for hazardous waste.

XIV. Transportation Information

Proper Shipping Name, Hazard Class, UN/NA Number Packing Group, Emergency Response Guide Number	
	Not regulated
Labels required per 49 CFR 172.101:	None
Size for "Limited quantity" per 49 CFR 173.150-.155:	Not applicable
Reportable Quantity ("RQ") per 49 CFR172.101:	None
Air (IATA/ICAO) Passenger & Cargo:	Not applicable
Eff. Jan 1, 2001 Cargo only:	Not applicable
Special Provisions:	Not applicable
Emergency response Group Code:	Not applicable

XV. Regulatory Information

UNITED STATES:
Toxic Substances Control Act (TSCA):
The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.
Superfund Amendments and Reauthorization Act (SARA) Title III:
See Section III of this MSDS.

Safety Phrases:
Keep container tightly closed in a well ventilated area, away from sources of ignition. No smoking.
Do not breathe gas, fumes, vapor or spray from this product.
Do not empty into drains.

State Right-to-Know Regulations Status of Ingredients
Pennsylvania: No information
New Jersey: No information
Massachusetts: No information

Hazard Category Classifications and Ratings

HMIS Hazard Ratings: Health 1 Fire 1 Instability 0 Other B (Goggles, gloves)
NFPA 704 Hazard Ratings: Health 1 Flammability 1 Reactivity 0 Special NA
Hazard Ratings: Least: 0 Slight: 1 Moderate: 2 High: 3 Extreme: 4

XVI. Additional Information

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. WE BELIEVE THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF ITS PUBLICATION DATE, BUT MAKE NO WARRANTY THAT IT IS. IF THIS MSDS IS MORE THAN THREE YEARS OLD YOU SHOULD CONTACT THE SUPPLIER TO MAKE CERTAIN THAT THE INFORMATION IS CURRENT.

GHS SAFETY DATA SHEET

WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe

Date Revised: **DEC 2011**
Supersedes: **OCT 2010**

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **WELD-ON® P-70™ Low VOC Primer for PVC and CPVC Plastic Pipe**

PRODUCT USE: Low VOC Primer for PVC and CPVC Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Carson, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, 813-248-0585 (International)

Medical: Tel. 800.451.8346, 760.602.8703 3E Company (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2B				

GHS LABEL:   **OR**  

Signal Word: **Danger**

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H332: Harmful if inhaled	P280: Wear protective gloves/protective clothing/eye protection/face protection
H335: May cause respiratory irritation	P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
H336: May cause drowsiness or dizziness	P403+P233: Store in a well ventilated place. Keep container tightly closed
EUH019: May form explosive peroxides	P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	45 - 59
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	19 - 29
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	5 - 15
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	5 - 20

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
# indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.

Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.

Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.

Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.

Unsuitable Extinguishing Media: Water spray or stream.

Exposure Hazards: Inhalation and dermal contact

Combustion Products: Oxides of carbon and smoke

	HMIS	NFPA	
Health	2	2	0-Minimal
Flammability	3	3	1-Slight
Reactivity	0	0	2-Moderate
PPE	B		3-Serious
			4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).

Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.

Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.

Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.

Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL:
Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	
Cyclohexanone	20 ppm	50 ppm	50 ppm	
Acetone	500 ppm	750 ppm	1000 ppm	

Engineering Controls: Use local exhaust as needed.

Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.

Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.

Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear or purple, thin liquid		
Odor:	Ethereal	**Odor Threshold:**	0.88 ppm (Cyclohexanone)
pH:	Not Applicable		
Melting/Freezing Point:	-108.5°C (-163.3°F) Based on first melting component: THF	**Boiling Range:**	56°C (133°F) to 156°C (313°F)
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	**Evaporation Rate:**	> 1.0 (BUAC = 1)
Flash Point:	-20°C (-4°F) TCC based on Acetone	**Flammability:**	Category 2
Specific Gravity:	0.858 @23°C (73°F)	**Flammability Limits:**	**LEL:** 1.1% based on Cyclohexanone
Solubility:	Solvent portion soluble in water. Resin portion separates out.		**UEL:** 12.8% based on Acetone
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	190 mm Hg @ 20°C (68°F) Acetone
Auto-ignition Temperature:	321°C (610°F) based on THF	**Vapor Density:**	>2.0 (Air = 1)
Decomposition Temperature:	Not Applicable	**Other Data: Viscosity:**	Water-thin
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤ 550 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation:	Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact:	Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact:	Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion:	May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: None known to humans

Toxicity:	LD_{50}	LC_{50}
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m^3 (rat)
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m^3 (rat)
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m^3 (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 550 g/l.
Degradability:	Biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1993
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping
DOT Limited Quantity: Up to 1L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	Flammable Liquid, n.o.s. (Acetone, Tetrahydrofuran)
UN NUMBER/PACKING GROUP:	UN 1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant

Symbols: F, Xi

Risk Phrases:
R11: Highly flammable.
R20: Harmful by inhalation.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Safety Phrases:
S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.
S46: If swallowed, seek medical advise immediately and show this container or label.

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

SECTION 16 - OTHER INFORMATION

Specification Information:

Department issuing data sheet:	IPS, Safety Health & Environmental Affairs	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
E-mail address:	<EHSinfo@ipscorp.com>	
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	12/14/2011 / Updated GHS Standard Format	
Intended Use of Product:	Primer for PVC and CPVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

RAIN-R-SHINE PVC CEMENT

SECTION 1 IDENTITY OF MATERIAL

Trade Name:	OATEY RAIN-R-SHINE PVC CEMENT
Product Numbers:	31580, 31581, 31582 31583, 31584
Formula:	PVC Resin in Solvent Solution
Synonyms:	PVC Plastic Pipe Cement
Firm Name & Mailing Address:	OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. http://www.oatey.com
Oatey Phone Number:	(216) 267-7100
Emergency Phone Numbers:	For Emergency First Aid call 1-303-623-5716 COLLECT. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300

SECTION 2 COMPOSITION

INGREDIENTS:	%:	CAS NUMBER:	ACGIH TLV TWA:	OSHA PEL TWA:	OTHER:
Cyclohexanone	7 - 12%	108-94-1	20 ppm(skin)	25 ppm	
Tetrahydrofuran	40 - 55%	109-99-9	200 ppm 750 ppm STEL	200 ppm	25 ppm (Mfg)
Methyl Ethyl Ketone	24 - 31%	78-93-3	200 ppm	200 ppm	
Grey Colorant (Non-hazardous)	1 - 3%	N/A	None Established	None Established	
PVC Resin (Non-hazardous)	14 - 18%	9002-86-2	10 mg/m3	15 mg/m3	
Amorphous Fumed Silica (Non-hazardous)	1 - 3%	112945-52-5	10 mg/m3	None Established	

SECTION 3 EMERGENCY OVERVIEW

Grey liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

NFPA Hazard Signal: Health: 2 Stability: 1 Flammability: 3 Special: None
HMIS Hazard Signal: Health: 3 Stability: 1 Flammability: 3 Special: None
OSHA Hazard Classification: Flammable, irritant, organ effects
Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B

SECTION 4 EMERGENCY AND FIRST AID PROCEDURES - CALL 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with water for 15 minutes. If irritation persists, seek medical attention.

Inhalation: If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.

Ingestion: **DO NOT INDUCE VOMITING.** Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method:	0 - 5 Degrees F. / PMCC
Flammability:	LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing Media:	Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting Procedure:	Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards:	Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:	Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 12 for disposal information.

SECTION 7 HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage:	Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other:	"Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information:	This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.
VOC Level:	600 g/l per SCAQMD Test Method 316A.

SECTION 9 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:	Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection:	For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection:	Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.
Eye Protection:	Safety glasses with side shields or safety goggles.
Other:	Eye wash and safety shower should be available.

SECTION 10 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	151 Degrees F / 66 C
Melting Point:	N/A
Vapor Pressure:	145 mmHg @ 20 Degrees C
Vapor Density:	(Air = 1) 2.5
Volatile Components:	82-86%
Solubility In Water:	Negligible
pH:	N/A
Specific Gravity:	0.94 +/- 0.02
Evaporation Rate:	(BUAC = 1) = 5.5 - 8.0
Appearance:	Grey Liquid
Odor:	Ether-Like
Will Dissolve In:	Tetrahydrofuran
Material Is:	Liquid

SECTION 11 STABILITY AND REACTIVITY

Stability:	Stable.
Conditions To Avoid:	Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.
Incompatibility/ Materials To Avoid:	Oxidizing agents, alkalies, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous Polymerization:	Will not occur.

SECTION 12 DISPOSAL INFORMATION

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

SECTION 13 TOXICOLOGICAL INFORMATION

Inhalation:	Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.
Skin:	May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.
Eye:	Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.
Ingestion:	Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.
Chronic Toxicity:	Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.
Toxicity Data:	Cyclohexanone: Oral rat LD50: 1,620 mg/kg Inhalation rat LC50: 8,000 ppm/4 hours Skin rabbit LD50: 1 mL/kg Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg Inhalation rat LC50: 21,000 ppm/3 hours Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg Inhalation rat LC50: 23,500 mg/m3/8 hours Skin rabbit LD50: 6,480 mg/kg
Sensitization:	None of the components are known to cause sensitization.
Carcinogenicity:	None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to Tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health are unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) as “A3,” Confirmed Animal Carcinogen with Unknown Relevance to Humans. incidences of tumors in humans have not been reported for THF.
Mutagenicity:	Cyclohexanone has been positive in bacterial and mammalian assays. Tetrahydrofuran was positive in a bacterial assay. Methyl ethyl ketone is not considered genotoxic based on laboratory studies.
Reproductive Toxicity:	Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.
Medical Conditions Aggravated By Exposure:	Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 14 TRANSPORTATION INFORMATION

DOT	Less than 1 Liter (0.3 gal)	Greater than 1 Liter (0.3 gal)
Proper Shipping Name:	Consumer Commodity	Adhesives
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1133
Hazard Labels:	None	Flammable Liquid
IMDG		
Proper Shipping Name:	Adhesives	Adhesives
Hazard Class/Packing Group:	3, II	3, II
UN Number:	UN1133	UN1133
Label:	None (Limited Quantities are excepted from labeling)	Class 3 (Flammable Liquid)

RCRA Hazardous Waste Number: U057, U159, U213
EPA Hazardous Waste ID Number: D001, D035, F003, F005
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)
2000 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATIONS

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Chemical	CAS #	%
Methyl Ethyl Ketone	78-93-3	24-31%

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (55% maximum) of 1,000 lbs, is 1,818 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain any chemicals subject To California Proposition 65 regulation.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

SECTION 16 DISCLAIMER

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

RectorSeal No 5
MATERIAL SAFETY DATA SHEET

MSDS 0011

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
RectorSeal No. 5

HMIS CODES
Health 1
Flammability 2
Reactivity 0
PPI B

PRODUCT CODES
25631, 25551, 25431, 25300, 25271, 25191, 25112, 25780, 25790

CHEMICAL FAMILY:
Organic

USE
Pipe Thread Sealant

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800)424-9300 USA
001-527-3887 International

DATE OF VALIDATION
August 2, 2011

TECHNICAL SERVICE TELEPHONE NO.
(800)231-3345 or (713)263-8001

DATE OF PREPARATION
August 2, 2011

Section 2 -- HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
OSHA Hazards
Combustable
TARGET ORGANS
Not Classified
GHS CLASSIFICATION
PHYSICAL HAZARDS: Combustable Liquid
HEALTH HAZARDS
Acute Toxicity:
Oral: Not Classified
Dermal: Not Classified
Inhalation: Not Classified
Skin Corrosion/Irritation: Not Classified
Serious Eye Damage/Eye Irritation: Not Classified
Skin Sensitization: Not Classified
Respiratory Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: See Section 11
Reproductive Toxicology: Not Classified
Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified
Aspiration Toxicity: Not Classified

GHS Label elements, including precautionary statements
Pictogram: Harmful / Irritant
Signal Word: Caution
Hazard Statements:
H302 - Harmful if swallowed.
H313 - May be harmful in contact with skin.
H335 + H336 - May cause respiratory irritation, and drowsiness or dizziness.
Precautionary Statements:
P102 - Keep out of reach of children.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362 - Take off contaminated clothing and wash before reuse.
EUH066 - Repeated exposure may cause skin dryness or cracking
Precautionary Statements - EU No. 1272/2008

SUMMARY OF ACUTE HAZARDS

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION

Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

EYE CONTACT

Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION

Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS

Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

Section 3 -- COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT: Diacetone Alcohol
PERCENTAGE BY WEIGHT: 20-30
CAS NUMBER: 123-42-2
EC# : 204-626-7

Section 4 -- FIRST AID MEASURES

If INHALED:	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
If on SKIN:	Wash with soap and water. If irritation occurs, seek medical attention.
If in EYES:	Flush eyes with large amounts of water for 15 minutes. Get medical attention.
If SWALLOWED:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Section 5 -- FIRE FIGHTING MEASURES

EXTINGUSING MEDIA

Foam, dry chemical, carbon dioxide or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

UNUSUAL FIRE AND EXPLOSION HAZARDS: Combustible - moderate flash point. Vapors heavier than air and may travel along the ground or to low spots at considerable distances to a source of ignition resulting in potential

flashback. Burning liquid may float on water. Heat may build up pressure and rupture containers.

Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames.
OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers. KEEP OUT OF REACH OF CHILDREN.

Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	UNITS
Diacetone Alcohol	
ACGIH TLV	50 ppm
OSHA PEL	50 ppm

RESPIRATORY PROTECTION (SPECIFY TYPE): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.
VENTILATION - LOCAL EXHAUST: Acceptable
SPECIAL: Explosion-proof equipment.
MECHANICAL (GENERAL): Preferable
OTHER: N/A
PROTECTIVE GLOVES: Wear rubber gloves.
EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.
WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	322 F (161 C) @ 760mm Hg
SPECIFIC GRAVITY (H20 = 1):	1.38
VAPOR PRESSURE (mm Hg):	0.3 @ 68 F (20 C)
MELTING POINT:	N/A
VAPOR DENSITY (AIR = 1):	1.1
EVAPORATION RATE (ETHYL ACETATE = 1):	0.14
APPEARANCE/ODOR:	Yellow Paste/Mild Odor
SOLUBILITY IN WATER:	23%
VOLATILE ORGANIC COMPOUNDS(VOC)Content (Theoretical Percentage By Weight):	23% or (230 g/L)
Flash POINT	150 F (65 C) SETA CC
LOWER EXPLOSION LIMIT	N/D
UPPER EXPLOSION LIMIT	N/D

Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Heat, sparks, open flames, and strong oxidizing. Temperatures above 500 F (260 C).
INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen, strong oxidizing

materials, molten alkali metals.
HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.
HAZARDOUS POLYMERIZATION: Will not occur.

Section 11 -- TOXICOLOGY INFORMATION

CHRONIC HEALTH HAZARDS
No ingredients in this product is an IARC, NTP or OSHA Lister carcinogen.

TOXICOLOGY DATA
Ingredient Name

Diacetone Alcohol

Oral-Rat	LD50:4000 mg/kg
Inhalation-Human	TCLo: 100 ppm

Section 12 -- Ecological Information

ECOLOGICAL DATA
Ingredient Name

Diacetone Alcohol

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

Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste
Disposal Method: Approved landfill
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

Section 14 -- TRANSPORTATION INFORMATION

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

Section 15 -- REGULATORY INFORMATION

REGULATORY DATA
Ingredient Name

Diacetone Alcohol

SARA 313	N/A
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Section 16 -- OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001

MATERIAL SAFETY DATA SHEET

MSDS 0077

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
RectorSeal T Plus 2

HMIS CODES

Health	1
Flammability	1
Reactivity	0
PPI	B

PRODUCT CODES
23710, 23631, 23551, 23431, 23391, 23271, 23191, 23112

CHEMICAL FAMILY:
Organic

USE
Pipe Thread Sealant

MANUFACTURER'S NAME
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

EMERGENCY TELEPHONE NO.
Chemtrec 24 Hours
(800) 424-9300

VALIDATION DATE
February 10, 2006

TECHNICAL SERVICE TELEPHONE NO.
(800) 231-3345

REVISION DATE
February 10, 2006

Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS

None as defined by OSHA Hazard Communication Standard 29 CFR 1910.1200.

Section 3 -- HAZARDS IDENTIFICATION

SUMMARY OF ACUTE HAZARDS
May produce slight to moderate skin and eye irritation.

ROUTE OF EXPOSURE, SIGNS AND SYMPTOMS

INHALATION
None known.

EYE CONTACT
Irritation, watering may occur.

SKIN CONTACT
Frequent or prolonged contact may irritate and cause dermatitis.

INGESTION
May cause nausea and vomiting. Not expected to produce toxic effects unless large amounts are ingested.

SUMMARY OF CHRONIC HAZARDS
None known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Individuals with pre-existing or chronic diseases of the eyes, skin or persons with chemical sensitivity may have increased susceptibility to excessive exposures.

Section 4 -- FIRST AID MEASURES

If INHALED:	N/A
If on SKIN:	Wash with soap and water. Seek medical attention if irritation persists.
If in EYES:	Flush with large amounts of water. Get medical attention if irritation persists.
If SWALLOWED:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give

anything by mouth to an unconscious person.

Section 5 -- FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL
>300 F (149 C) SETA CC	N/D	N/D

EXTINGUSING MEDIA
Foam, dry chemical, carbon dioxide or water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).
UNUSUAL FIRE AND EXPLOSION HAZARDS: Heat may build up pressure and rupture closed containers. Above 500 F (260 C) the fumes are acutely toxic.

Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wipe or scrape up spilled material to prevent footing hazard and place in trash.

Section 7 -- HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed and upright when not in use.
OTHER PRECAUTIONS: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.
KEEP OUT OF REACH OF CHILDREN.

Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION (SPECIFY TYPE): None required.
VENTILATION - LOCAL EXHAUST: N/A
SPECIAL: N/A
MECHANICAL (GENERAL): N/A
OTHER: N/A
PROTECTIVE GLOVES: Wear rubber gloves.
EYE PROTECTION: Chemical splash goggles (ANSI Z-87.1 or equivalent)
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Coveralls recommended.
WORK/HYGIENIC PRACTICES: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	N/D
SPECIFIC GRAVITY (H20 = 1):	1.32
VAPOR PRESSURE (mm Hg):	< 1 @ 77 F (25 C)
MELTING POINT:	N/A
VAPOR DENSITY (AIR = 1):	N/A
EVAPORATION RATE (ETHYL ACETATE = 1):	N/A
APPEARANCE/ODOR:	White Paste/Slight Odor
SOLUBILITY IN WATER:	Negligible

VOLATILE ORGANIC COMPOUNDS(VOC)Content
(Theoretical Percentage By Weight): 0% or (0 g/L)

Section 10 -- STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: None known.

INCOMPATIBILITY (MATERIALS TO AVOID): Gaseous oxygen and strong oxidizing materials.
HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO2 and fragmented hydrocarbons.
HAZARDOUS POLYMERIZATION: Will not occur.

Section 11 -- TOXICOLOGY INFORMATION

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

TOXICOLOGY DATA
Ingredient Name

Oral-Rat	LD50: N/A
Inhalation-Rat	LC50: N/A

Section 12 -- Ecological Information

ECOLOGICAL DATA
Ingredient Name

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

Section 13 -- DISPOSAL CONSIDERATIONS

Waste Classification: Non-regulated solid waste
Disposal Method: Approved landfill
Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

Section 14 -- TRANSPORTATION INFORMATION

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

Section 15 -- REGULATORY INFORMATION

REGULATORY DATA
Ingredient Name

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

Section 16 -- OTHER INFORMATION

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made. Consult RectorSeal for further information: (713) 263-8001

LAWSON
PRODUCTS, INC.

Material Safety Data Sheet

Revision Date *24-Sep-2013*

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code 9063
Product name TEFLON PIPE TAPE
Recommended Use Adhesive

Supplier Lawson Products, Inc.
8770 W.Bryn Mawr Ave.- Suite 900
Chicago, IL 60631
1-866-529-7664

Emergency telephone number (888) 426-4851

2. HAZARDS IDENTIFICATION

Emergency Overview
The product contains no substances which at their given concentration, are considered to be hazardous to health.

Aggravated Medical Conditions
None Known

Principal Routes of Exposure
Inhalation.

Potential health effects

Eyes No adverse affects expected.

Skin Experience shows no unusual dermatitis hazard from routine handling.

Inhalation When thermally decomposed, Teflon may cause polymer fume fever. Symptoms of polymer fume fever are chills, fever, and flu-like reaction . Joint Pain. Coughing.

Ingestion No adverse affects expected.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Polytetrafluoroethylene	9002-84-0	100

4. FIRST AID MEASURES

Eye contact No specific treatment is necessary since this material is not likely to be hazardous by eye contact.

Skin contact Wash area thoroughly with soap and water.

Ingestion No specific treatment is necessary since this material is not likely to be hazardous by ingestion. Consult a physician if necessary.

Inhalation Move to fresh air.

5. FIRE FIGHTING MEASURES

Flash point °C Not Applicable
Flash point °F Not Applicable
Method Not Applicable

Autoignition temperature °C No data available
Autoignition temperature °F No data available

Flammability Limits (% in Air)
Upper No data available
Lower No data available

Suitable extinguishing media
Foam. Carbon dioxide (CO2). Dry chemical.

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

Fire and Explosion Hazards
Contact with open flame generates corrosive and toxic fumes.

Hazardous decomposition products
See Section 10.

Sensitivity to shock
No information available.

Sensitivity to static discharge
No information available.

6. ACCIDENTAL RELEASE MEASURES

Methods for cleaning up
Collect and contain for disposal.

7. HANDLING AND STORAGE

7. HANDLING AND STORAGE

Handling
Use normal safe handling procedures. Do not smoke while using.

Storage
Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Polytetrafluoroethylene	-	-	-	-

Ventilation and Environmental Controls
Provide local exhaust ventilation.

Hygiene measures
General industrial hygiene practice.

Respiratory protection
None necessary under normal conditions.

Hand Protection
Gloves are not required in normal use.

Eye protection
None necessary under normal use conditions.

Skin and body protection
None necessary under normal conditions

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Solid
Color	White
Odor	None
Odor Threshold	No information available
pH	N/Ap
Specific Gravity	0.35-1.5
Vapor pressure	0
Vapor density	No data available
Evaporation Rate	0
Water solubility	Insoluble
Partition Coefficient (n-octanol/water)	Not Applicable
Boiling point/range °C	No data available
Boiling point/range °F	No data available
Melting point/range °C	> 260
Melting point/range °F	> 500
Flash point °C	Not Applicable
Flash point °F	Not Applicable

10. STABILITY AND REACTIVITY

Stability
Stable.

Conditions to avoid
Avoid temperatures above 500 degrees F.

Incompatability
Incompatiable with:. Fluorine. Chlorine trifluoride . Alkali metals. Halogenated Compounds .

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating gases and vapours. Hexafluoroethylene. Carbonyl Fluoride. Carbon monoxide. Inhalation of fumes from overheating or burning, or from smoking tobacco or cigarettes contaminated with polytetrafluoroethylene dust, may cause Polymer Fume Fever, a flu-like illness with chills and fever. Symptoms may be delayed for several hours.

Polymerization
Will not occur.

11. TOXICOLOGICAL INFORMATION

Component Information

Chemical Name	LD50 (oral,rat)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat)
Polytetrafluoroethylene 9002-84-0	-	-	-

Synergistic Products None known

Potential health effects

Sensitization None known

Chronic toxicity None known

Mutagenic effects None known

Teratogenic effects None known

Reproductive toxicity None known

Target Organ Effects Eyes. Inhalation. Skin.

Carcinogenic effects Did not show carcinogenic or teratogenic effects in animal experiments.

Chemical Name	ACGIH OEL - Carcinogens	IARC	NTP - Known Carcinogens	NTP - Suspected Human Carcinogens	OSHA RTK Carcinogens
Polytetrafluoroethylene	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

12. ECOLOGICAL INFORMATION

12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products
Dispose in accordance with federal, state, and local regulations. Can be landfilled or incinerated, when in compliance with local regulations.

14. TRANSPORTATION INFORMATION

DOT
Not Regulated

TDG
Not Regulated

15. REGULATORY INFORMATION

State Regulations

Chemical Name	New Jersey - RTK	Pennsylvania - RTK	California Prop. 65
Polytetrafluoroethylene	Not Listed	Listed	Not Listed

International Inventories

Chemical Name	EINECS	DSL	NDSL	TSCA
Polytetrafluoroethylene	-	X	-	X

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

16. OTHER INFORMATION

NFPA

Health - 2
Flammability - 1
Reactivity - 0

Prepared By V. Shargorodsky, Regulatory Affairs Engineer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

GHS SAFETY DATA SHEET

WELD-ON® 771™ Low VOC Pipe Cement for ABS Plastic Pipe

Date Revised: **APR 2015**
Supersedes: **OCT 2014**

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **WELD-ON® 771™ Low VOC Pipe Cement for ABS Plastic Pipe**

PRODUCT USE: Low VOC Solvent Cement for ABS Plastic Pipe

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

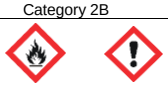
Medical: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2B				

GHS LABEL:



Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H336: May cause drowsiness or dizziness	P280: Wear protective gloves/protective clothing/eye protection/face protection
EUH 066: Repeated exposure may cause skin dryness or cracking.	P337+P313: Get medical advice/attention
	P403+P233: Store in a well ventilated place. Keep container tightly closed
	P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	35 - 50
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	10 - 20

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
# indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: None known to humans

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon and smoke

	HMIS	NFPA	
Health	2	2	1-Slight
Flammability	3	3	2-Moderate
Reactivity	0	0	3-Serious
PPE	B		4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat, drink or smoke while handling.
Storage: Store in ventilated room or shade below 44°C (110°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Milky or yellow, medium syrupy liquid		
Odor:	Ketone	**Odor Threshold:**	1 ppm (Acetone)
pH:	Not Applicable		
Melting/Freezing Point:	-95°C (-139°F) Based on first melting component: Acetone	**Boiling Range:**	56°C (133°F) to 80°C (176°F)
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	**Evaporation Rate:**	>1.0 (BUAC = 1)
Flash Point:	-20°C (-4°F) T.C.C. based on Acetone	**Flammability:**	Category 2
Specific Gravity:	0.886 @23°C (73°F)	**Flammability Limits:**	**LEL:** 1.4% based on MEK
Solubility:	Solvent portion soluble in water. Resin portion separates out.		**UEL:** 12.8% based on Acetone
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	190 mm Hg @ 20°C (68°F): Acetone
Auto-ignition Temperature:	404°C (759°F): MEK	**Vapor Density:**	> 2.0 (Air = 1)
Decomposition Temperature:	Not Applicable	**Other Data: Viscosity:**	Medium bodied
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤ 325 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD_{50}	LC_{50}
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m^3 (rat)
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m^3 (rat)

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place, typically at a rate of ≤ 325 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Class 3 Flammable Liquid
Marine Pollutant:	NO

EXCEPTION for Ground Shipping

DOT Limited Quantity: Up to 5L per inner packaging, 30 kg gross weight per package.
Consumer Commodity: Depending on packaging, these quantities may qualify under DOT as "ORM-D" .

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES
UN NUMBER/PACKING GROUP:	UN 1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant
Symbols: F, Xi

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

Risk Phrases:
R11: Highly flammable.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Safety Phrases:
S2: Keep out of the reach of children
S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.

SECTION 16 - OTHER INFORMATION

Specification Information:
Department issuing data sheet: IPS, Safety Health & Environmental Affairs
E-mail address: <EHSinfo@ipscorp.com>

All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).

Training necessary: Yes, training in practices and procedures contained in product literature.
Reissue date / reason for reissue: 4/7/2015 / Updated GHS Standard Format
Intended Use of Product: Solvent Cement for ABS Plastic Pipe

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M Brand Fire Barrier CP-25WB+
MANUFACTURER: 3M
DIVISION: Building & Commercial Services Division

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

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

Issue Date: 02/05/2008
Supercedes Date: 03/15/2007

Document Group: 09-5451-1

Product Use:

Intended Use:	Used as a firestop in buildings.
Specific Use:	Used as Firestop in buildings.

SECTION 2: INGREDIENTS

Ingredient	C.A.S. No.	% by Wt
Water	7732-18-5	20 - 30
Zinc Borate	1332-07-6	20 - 30
Synthetic Polymer Latex	Trade Secret	15 - 25
Sodium Silicate	1344-09-8	10 - 20
Ethylhexyldiphenyl Phosphate	1241-94-7	5 - 10
Iron Oxide	1309-37-1	1 - 5
Polyethylene Glycol	25322-68-3	1 - 5
Chopped Fiberglass	65997-17-3	1 - 5

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Paste
Odor, Color, Grade: Brown caulk thixotropic paste with negligible odor.
General Physical Form: Solid
Immediate health, physical, and environmental hazards:

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

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

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

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: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

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	*Not Applicable*
Flash Point	*Not Applicable*
Flammable Limits - LEL	*Not Applicable*
Flammable Limits - UEL	*Not Applicable*
OSHA Flammability Classification:	Not Applicable

5.2 EXTINGUISHING MEDIA
Material will not burn.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable.

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Ventilate the area with fresh air. Collect as much of the spilled material as possible. Clean up residue with detergent and water. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

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

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

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

7.2 STORAGE

Store in a cool, dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use with appropriate local exhaust ventilation.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.
The following eye protection(s) are recommended: Indirect Vented Goggles.

8.2.2 Skin Protection

Avoid prolonged or repeated skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.
Gloves made from the following material(s) are recommended: Polyvinyl Chloride.

8.2.3 Respiratory Protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing

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

8.3 EXPOSURE GUIDELINES

Ingredient	Authority	Type	Limit	Additional Information
Iron Oxide	ACGIH	TWA, respirable	5 mg/m3	Table A4
Iron Oxide	OSHA	TWA, as fume	10 mg/m3	Table Z-1A
Chopped Fiberglass	3M	TWA, as dust	10 mg/m3	
POLYETHYLENE GLYCOLS	AIHA	TWA, as aerosol	10 mg/m3	

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

Specific Physical Form:	Paste
Odor, Color, Grade:	Brown caulk thixotropic paste with negligible odor.
General Physical Form:	Solid
Autoignition temperature	*Not Applicable*
Flash Point	*Not Applicable*
Flammable Limits - LEL	*Not Applicable*
Flammable Limits - UEL	*Not Applicable*

Specific Gravity	1.35 [*Ref Std:* WATER=1]
Melting point	*No Data Available*
Solubility in Water	Complete
Volatile Organic Compounds	0 % weight
Percent volatile	30 %
VOC Less H2O & Exempt Solvents	0 g/l

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance	Condition

Carbon monoxide	During Combustion
Carbon dioxide	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: Dispose of waste product in a sanitary landfill. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.

EPA Hazardous Waste Number (RCRA): Not regulated

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

SECTION 14:TRANSPORT INFORMATION

ID Number(s):
42-0016-4710-8, 42-0016-4715-7, 42-0016-4716-5, 98-0400-5380-7, 98-0400-5381-5, 98-0400-5382-3, 98-0400-5383-1, 98-0400-5406-0, 98-0400-5456-5, 98-0400-5463-1

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 - No 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):

Ingredient	C.A.S. No	% by Wt
Zinc Borate (ZINC COMPOUNDS)	1332-07-6	20 - 30

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.

WHMIS: Hazardous

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:** 0 **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:** 0 **Reactivity:** 0 **Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS®) 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® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

Reason for Reissue: Reissued to make corrections in tables.

Revision Changes:
Copyright was modified.
Section 9: Property description for optional properties was modified.
Section 14: ID Number Heading Template 1 was added.
Section 14: ID Number(s) Template 1 was added.
Section 2: Ingredient table was added.
Section 15: EPCRA 313 information was added.

Section 15: EPCRA 313 text was added.
Section 8: Exposure guidelines ingredient information was added.
Section 8: Exposure guidelines data source legend 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.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

3M MSDSs are available at www.3M.com

Section 1 - Chemical Product and Company Identification

Product Name Firetemp® Firestop
CAS# Mixture
Generic Name Coating (Latex)
Formula Mixture
Chemical Name: Mixture
Hazard Label FS-001

Manufacturer Information

Johns Manville Insulation Group
Fire Protection Systems
P.O. Box 5108
Denver, CO 80127

Telephone: 303-978-2000
Internet Address: http://www.jm.com
Emergency: 800-424-9300 (Chemtrec)

Trade Names: Firetemp® Firestop (CI, CE, SE, SI, and TF)

Section 2 - Composition / Information on Ingredients

CAS #	Component	Percent
9003-20-7	Acetic acid, ethenyl ester, homopolymer	45-65
1317-65-3	Calcium carbonate	25-45
7782-42-5	Graphite	0-30
57-55-6	1,2-Propylene glycol	1-5
Not Available	Blue pigment	<0.5
13463-67-7	Titanium dioxide	<0.5
1314-13-2	Zinc oxide	<0.5
1309-37-1	Iron oxide	<0.5

Additional Component Information

Note: Due to the product form, exposures to hazardous dusts or fumes will not occur. Exposure limits are given for reference only.

Section 3 - Hazards Identification

Emergency Overview

APPEARANCE AND ODOR: Light blue, grey or red colored caulk, thin film or spray mastic.

Under normal conditions of use, this product is not expected to create any unusual emergency hazards.

If sprayed on skin, wash with soap and water.

If sprayed in eyes, flush with water for 15 minutes and seek medical attention.

If ingested, do not induce vomiting, drink plenty of water, call a doctor immediately.

Product will not burn, but in the event of fire, use normal fire fighting procedures to prevent inhalation of smoke and gases.

Potential Health Effects

Summary

Due to the form of the product hazardous exposures are unlikely to occur. Exposure may cause slight temporary irritation to skin and eye in some individuals.

Inhalation

Not applicable

Skin

Temporary irritation may occur.

Absorption

Not applicable

Ingestion

This product is not intended to be ingested or eaten under normal conditions of use. If ingested, it may cause nausea and systemic poisoning.

Eyes

Temporary irritation (itching) or redness may occur.

Target Organs

Skin and eyes.

Primary Routes of Entry (Exposure)

Skin and eyes.

Medical Conditions Aggravated by Exposure

None identified.

Section 4 - First Aid Measures

First Aid: Inhalation

Not applicable

First Aid: Skin

Remove contaminated clothing. Wash exposed skin with soap and cold water. Launder contaminated clothing before reusing.

First Aid: Ingestion

This product is not intended to be ingested or eaten. If this product is ingested, do not induce vomiting. Drink plenty of water. Contact a physician immediately.

First Aid: Eyes

Flush eyes with large amounts of water for 5-20 minutes. Contact a medical professional.

First Aid: Notes to Physician

Treat symptomatically. Emesis may be indicated in recent (within 30 minutes) ingestion of large quantities.

Section 5 - Fire Fighting Measures

Flash Point: Not applicable
Upper Flammable Limit (UFL): Not applicable
Auto Ignition: Not determined
Rate of Burning: Not determined
Method Used: Not applicable
Lower Flammable Limit (LFL): Not applicable
Flammability Classification: Not determined

General Fire Hazards

There is no potential for fire or explosion.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide, aliphatic hydrocarbons, hydrocarbon oxidation products including aldehydes and alcohols, nitrogen oxidation products, hydrogen flouride, hydrogen cyanide, and sulfur oxides.

Extinguishing Media

Use any media suitable for the surrounding fires.

Fire Fighting Equipment/Instructions

Firefighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

Section 6 - Accidental Release Measures

Containment Procedures

Clean-Up Procedures

Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRA; 40 CFR 261). Comply with state and local regulations for disposal of these products. If you are unsure of the regulations, contact your local Public Health Department, or the local office of the Environmental Protection Agency (EPA).

Section 7 - Handling and Storage

Handling Procedures

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

Storage Procedures

Material should be kept cool and dry, and protected from the elements. Store in tightly closed containers to prevent contamination. Store at temperatures between 4°-35°C/40°-95°F. Keep away from excess heat. Do not freeze. Warehouse storage should be in accordance with package directions, if any.

Section 8 - Exposure Controls / Personal Protection

Exposure Guidelines

A: General Product Information

No information available for the product.

B: Component Exposure Limits

Calcium carbonate (1317-65-3)

ACGIH: 10 mg/m3 TWA (The value is for particulate matter containing no asbestos and <1% crystalline silica)
OSHA: total dust: 15 mg/m3 TWA; respirable fraction: 5 mg/m3 TWA

Graphite (7782-42-5)

ACGIH: all forms except graphite fibers, respirable fraction: 2 mg/m3 TWA
OSHA: respirable dust: 2.5 mg/m3 TWA

Zinc oxide (1314-13-2)

ACGIH: fume: 5 mg/m3 TWA; dust: 10 mg/m3 TWA (The value for Zinc oxide 'dust' is for total dust containing no asbestos and < 1% crystalline silica)
fume: 10 mg/m3 STEL
OSHA: fume: 5 mg/m3 TWA; total dust: 10 mg/m3 TWA; respirable fraction: 5 mg/m3 TWA
fume: 10 mg/m3 STEL

Iron oxide (1309-37-1)

ACGIH: as Fe: 5 mg/m3 TWA (welding fumes, dust, total particulate (N.O.C.))
OSHA: fume: 10 mg/m3 TWA

Titanium dioxide (13463-67-7)

ACGIH: 10 mg/m3 TWA
OSHA: total dust: 10 mg/m3 TWA

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Safety glasses with sideshields, chemical goggles, or face mask recommended.

Personal Protective Equipment: Skin

Any chemical impervious glove may be used to protect skin.

Personal Protective Equipment: Respiratory

Not applicable

Ventilation

Not applicable

Personal Protective Equipment: General

Impervious apron or coveralls can be used to protect clothing.

Section 9 - Physical & Chemical Properties

Appearance:	Light blue, grey or red colored caulk, thin film or spray mastic	**Odor:**	No specific odor
Physical State:	semi-solid	**pH:**	7-8.5
Vapor Pressure:	Not determined	**Vapor Density:**	>1
Boiling Point:	Not applicable	**Melting Point:**	Not applicable
Solubility (H2O):	Not determined	**Specific Gravity:**	>1.32 (25°C)
Freezing Point:	Not determined	**Evaporation Rate:**	<1
Viscosity:	2.5 RPM (24,000-76,000) cps	**Percent Volatile:**	Not determined
VOC:	Not determined		

Section 10 - Chemical Stability & Reactivity Information

Chemical Stability

This is a stable material. This product is not reactive.

Hazardous Decomposition

Dried films forced to burn will produce: Carbon monoxide, carbon dioxide, aliphatic hydrocarbons, hydrocarbon oxidation products including aldehydes and alcohols, nitrogen oxidation products, hydrogen flouride, hydrogen cyanide, and sulfur oxides.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

Acute and Chronic Toxicity

A: General Product Information

Skin and eye irritation may occur after contact with product.

B: Component Analysis - LD50/LC50

1,2-Propylene glycol (57-55-6)
Oral LD50 Rat : 20 gm/kg
Oral LD50 Mouse : 22 gm/kg
Dermal LD50 Rabbit : 20800 mg/kg

Zinc oxide (1314-13-2)
Inhalation LC50 Mouse : 2500 mg/m3
Oral LD50 Mouse : 7950 mg/kg

Carcinogenicity

A: General Product Information

The Occupational Safety and Health Administration (OSHA), National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), and American Conference of Governmental Industrial Hygienists (ACGIH) have not classified this product in its entirety as a carcinogen.

B: Component Carcinogenicity

Acetic acid, ethenyl ester, homopolymer (9003-20-7)
IARC: Monograph 19, Supplement 7; 1987 (Group 3 (not classifiable))

Iron oxide (1309-37-1)
ACGIH: as Fe: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 1, Supplement 7; 1987 (Group 3 (not classifiable))

Titanium dioxide (13463-67-7)
ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 47; 1989 (Group 3 (not classifiable))

Chronic Toxicity

None identified.

Section 12 - Ecological Information

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

1,2-Propylene glycol (57-55-6)
LC50 (24 hr) goldfish: >5000 mg/L.; LC50 (48 hr) guppy: >10000 mg/L.; EC50 (48 hr) water flea: >10000 mg/L.; EC50 (30 min) Photobacterium phosphoreum: 710 mg/L Microtox test.

Section 13 - Disposal Considerations

US EPA Waste Number & Descriptions

A: General Product Information

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

B: Component Waste Numbers

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

Disposal Instructions

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

Section 14 - Transportation Information

US DOT Information

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

Section 15 - Regulatory Information

US Federal Regulations

A: General Product Information

No information available for the product.

B: Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

State Regulations

A: General Product Information

No information available for the product.

B: Component Analysis - State

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

Component	CAS #	CA	FL	MA	MN	NJ	PA
Calcium carbonate	1317-65-3	No	No	Yes	Yes	No	Yes
Graphite	7782-42-5	Yes	Yes	Yes	Yes	No	Yes
1,2-Propylene glycol	57-55-6	No	No	No	Yes	No	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes	Yes	Yes	Yes
Iron oxide	1309-37-1	Yes	Yes	Yes	Yes	Yes	Yes
Titanium dioxide	13463-67-7	No	No	Yes	Yes	Yes	Yes

Other Regulatory Information

A: General Product Information

No information available for the product.

B: TSCA Status

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

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

C: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Acetic acid, ethenyl ester, homopolymer	9003-20-7	Yes	Yes	No
Calcium carbonate	1317-65-3	Yes	No	Yes
Graphite	7782-42-5	Yes	Yes	Yes
1,2-Propylene glycol	57-55-6	Yes	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes
Iron oxide	1309-37-1	Yes	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes	Yes

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	
1,2-Propylene glycol	57-55-6	1% item 1362 (1454)

WHMIS Classification

Canada Workplace Hazardous Materials Information System (WHMIS):
Controlled Product Classification: D2A based on the 1,2-Propylene glycol hazard.

Section 16 - Other Information

Other Information

Prepared for:
Johns Manville Insulation Group
Fire Protection Systems
P.O. Box 5108
Denver, CO 80217-5108

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

As of the date of preparation of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state law(s). However, no warranty or representation with respect to such information is intended or given.

Date	MSDS #	Reason
08/01/00	2100-1.0000	New MSDS authoring system.
08/17/00	2100-2.0000	Added CE to tradenames; changed Firetemp™ to Firetemp®; Deleted aluminum oxide from composition Sect. 2.

This is the end of MSDS # 2100

Material Safety Data Sheet

This material safety data sheet (MSDS) is provided as a courtesy in response to a customer request. This product is not regulated under, and a MSDS is not required for this product by the OSHA Hazard Communication Standard (29 CFR 1910.1200) because, when used as recommended or under ordinary conditions, it should not present a health and safety hazard. However, use or processing of the product not in accordance with the product's recommendations or not under ordinary conditions may affect the performance of the product and may present potential health and safety hazards.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Duct Tape
MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division

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

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

Issue Date: 02/04/2009
Supercedes Date: Initial Issue

Document Group: 26-2650-5

Product Use:
Specific Use: Bundling, Reinforcing, & Sealing
Intended Use: Industrial use

3M(TM) Duct Tape 3900, 3939, 6969
3M(TM) General Use Duct Tape 2929
3M(TM) Outdoor Masking and Stucco Tape 5959
3M(TM) Performance Plus Duct Tape 8979 & 8979N
3M(TM) Value Duct Tape 1900

SECTION 2: INGREDIENTS

Ingredient	C.A.S. No.	% by Wt
Polyethylene Film over Cloth Scrim Backing	None	51 - 99
Rubber Adhesive	Trade Secret	1 - 49

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: various colored duct tape
General Physical Form: Solid
Immediate health, physical, and environmental hazards: The environmental properties of this product present a low environmental hazard. This product, when used under reasonable conditions and in accordance with the 3M directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
No health effects are expected.

Skin Contact:
No health effects are expected.

Inhalation:
No health effects are expected.

Ingestion:
No health effects are expected.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

This substance does not leach metals or other RCRA (Resource Conservation and Recovery Act) listed TCLP (Toxic Characteristic Leaching Procedure) hazardous substances at concentrations that would make the product a hazardous waste.

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: No need for first aid is anticipated.

Skin Contact: No need for first aid is anticipated.

Inhalation: No need for first aid is anticipated.

If Swallowed: No need for first aid is anticipated.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	*Not Applicable*
Flash Point	*Not Applicable*
Flammable Limits - LEL	*Not Applicable*
Flammable Limits - UEL	*Not Applicable*

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: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Not applicable.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING
This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2 STORAGE
Not applicable.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Not applicable.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact.

8.2.2 Skin Protection
Gloves not normally required. Avoid prolonged or repeated skin contact.

8.2.3 Respiratory Protection
Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing
Not applicable.

8.3 EXPOSURE GUIDELINES

None Established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	various colored duct tape
General Physical Form:	Solid
Autoignition temperature	*Not Applicable*
Flash Point	*Not Applicable*
Flammable Limits - LEL	*Not Applicable*
Flammable Limits - UEL	*Not Applicable*
Boiling point	*Not Applicable*
Density	*Not Applicable*
Vapor Density	*Not Applicable*
Vapor Pressure	*Not Applicable*
Specific Gravity	*Not Applicable*
pH	*Not Applicable*
Melting point	*Not Applicable*
Solubility in Water	Nil
Evaporation rate	*Not Applicable*
Volatile Organic Compounds	*Not Applicable*
Percent volatile	*Not Applicable*
VOC Less H2O & Exempt Solvents	*Not Applicable*
Viscosity	*Not Applicable*

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition: Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.

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 if feasible. If product can't be reclaimed, dispose of waste product in a sanitary landfill. Alternatively, incinerate the waste product in an industrial, commercial, or municipal incinerator.

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

SECTION 14:TRANSPORT INFORMATION

Not regulated per U.S. DOT, IATA or IMO.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. *3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and* ***not*** ***the packaging, labeling, or marking requirements.*** *The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

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

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

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: 0 **Flammability:** 1 **Reactivity:** 0 **Special Hazards:** None

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

No revision information is available.

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

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

3M MSDSs are available at www.3M.com

OWENS CORNING INNOVATIONS FOR LIVING™

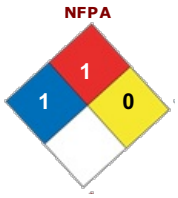
Personal Protective Equipment

Protective Gloves

Safety Glasses

SECTION 1 - IDENTIFICATION

Product Name:	**Low Density Fiber Glass Insulation/Insulation Board - Faced Products**
MSDS Manufacturer Number:	44964-SAM-EN
Synonyms:	Acoustical Backing Board, Aislhogar, Aislacustic™, All Service Faced Duct Wrap, All Service Fiber Glass Duct Wrap, Attic Blanket®, Base Cap Roof, Basement Blanket™, R-13 BASEMENT FINISHING SYSTEM™, Batts in Bags, Cathedral Batt Insulation, Cavity Wall, Cold Storage Wall, Curtain Wall 225, DecoSky™, Dishwasher, Duct Board, EnDuraCoat, Extended Flange 25, Faced Duct Wrap Insulation, Flame Spread 25, FS 25 Hi-Perm Residential/Commercial Insulation, Insulation Batts, Manufactured Housing Duct Board, Manufactured Housing Insulation, Metal Framing Batts, Metal Framing Insulation, NC Roof, NOISE Stop Blanket, Noise Stop Board, Pink Insulation, Pipe Wrap Insulation, PROPINK Fast Batt®, PINKPLUS®, QuietZone® Acoustic Batt, RC Roof Board, RF-3000, RI Aislamento Reflectivo Rigid Coated Duct, Roof Insulation, Sonobatts®, SOFTR®, Warm-N-Dri®, Water Heater Blanket, Wide Flute, YELLOW JACKET® Fiber Glass Insulation,
Product Use/Restriction:	Insulation
Manufacturer Name:	Owens Corning Insulating Systems, LLC
Address:	One Owens Corning Parkway Toledo, OH 43659
Customer Service Phone Number:	1-800-GET-PINK or 1-800-438-7465
Health Issues Information:	1-800-GET-PINK or 1-800-438-7465
Technical Product Information:	1-800-GET-PINK or 1-800-438-7465
Emergency Phone Number:	1-419-248-5330 (after 5pm ET and weekends)
CHEMTREC:	800-424-9300 (24 hours everyday)
Website:	www.owenscorning.com
MSDS Creation Date:	July 10, 2002
MSDS Revision Date:	May 14, 2012



SECTION 2 - HAZARD(S) IDENTIFICATION

Applies to Product Asphalt, Oxidized

Emergency Overview:	Exposure to dust may be irritating to eyes, nose, and throat.
Route of Exposure:	Eye contact Skin contact Inhalation
Potential Health Effects:	
Potential Health Effects:	There is no known chronic health effect connected with long-term use or contact with this product.
Eye:	May cause slight irritation.
Skin:	May cause slight skin irritation.
Inhalation:	May cause irritation of respiratory tract.
Ingestion:	Ingestion of this product is unlikely.
Chronic Health Effects:	There is no known chronic health effect connected with long-term use or contact with this product.
Aggravation of Pre-Existing Conditions:	Chronic respiratory or skin conditions may temporarily worsen from exposure to this product.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent
Fiber Glass (Wool)	65997-17-3	85 - 100 by weight
Cured Binder	N/A	0 - 15 by weight
Asphalt, Oxidized	64742-93-4	0-5 by weight

Non-Hazardous Statement: The remaining components of this product are non-hazardous or are in a small enough quantity as to not meet regulatory thresholds for disclosure. These components contain no substances or impurities which would influence the classification of this product.

SECTION 4 - FIRST AID MEASURES

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers.
Do not rub or scratch eyes.
If eye irritation persists, consult a specialist.

Skin Contact:
Wash off immediately with soap and cold water.
DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of the fibers.
Use a wash cloth to help remove fibers.
DO NOT rub or scratch affected areas.
Remove contaminated clothing.
If irritation persists get medical attention.
Never use compressed air to remove fibers from the skin.
If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin.

Inhalation:
Move to fresh air.
If symptoms persist, call a physician.

Ingestion:
Accidental ingestion of this material is unlikely.
If this does occur, watch person for several days to make sure intestinal blockage does not occur.
Rinse mouth with water and drink water to remove fibers from the throat.
If symptoms persist, call a physician.

Note to Physicians:
Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

Flammable Properties: Non Flammable.

Flash Point: None.

Flash Point Method: Not applicable.

Lower Flammable/Explosive Limit: Not applicable.

Upper Flammable/Explosive Limit: Not applicable.

Extinguishing Media:
dry chemical
foam
carbon dioxide (CO2)
water fog

Protective Equipment: Wear self-contained breathing apparatus (SCBA) and full fire fighting protective gear.

Unusual Fire Hazards: Hydrogen chloride to be released from the PVC barrier and vinyl facings during a fire.

Hazardous Combustion Byproducts:
Carbon monoxide.
Carbon dioxide.
Ammonia.
Other undetermined compounds could be released in small quantities.

Universal Fire And Explosion Hazards: Not available.

NFPA Ratings:

NFPA Health: 1

NFPA Flammability: 1

NFPA Reactivity: 0

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personnel Precautions: Avoid contact with skin and eyes.

Environmental Precautions: Prevent further leakage or spillage if safe to do so.

Other Precautions: Does not apply.

SECTION 7 - HANDLING and STORAGE

Handling:	Avoid dust formation. Do not breathe dust. Wear personal protective equipment.
Storage:	Keep product in its packaging until use to minimize potential dust generation. Product should be kept dry and undercover.
Hygiene Practices:	Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Provide local exhaust and/or general ventilation to maintain exposure below regulatory and recommended limits. Dust collection system must be used in transferring operations, cutting or machining or other dust generating processes, such as using power tools. Vacuum or wet clean-up methods should be used.
Eye/Face Protection:	Safety glasses with side-shields.
Skin Protection Description:	Protective gloves. Long sleeved shirt and long pants.
Respiratory Protection:	When workers are facing airborne particulate/dust concentrations above the exposure limit they must use appropriate certified respirators. A properly fitted NIOSH approved disposable N 95 type dust respirator or better is recommended.
Other Protective:	When the temperature of the surface being insulated exceeds 250°F (121°C), including initial startup, the binder in these products may undergo various degrees of decomposition depending on the temperature in the application. The need for respiratory protection will vary according to the airborne concentration of the decomposition products released and accumulated in the area. Wear the appropriate respiratory protection according to the conditions and exposure levels in the area.

EXPOSURE GUIDELINES

Ingredient	Guideline OSHA	Guideline ACGIH	Mexico		
Fiber Glass (Wool)	PEL-TWA: 1 f/cc (Respirable)	TLV-TWA: 1 f/cc (Respirable)	TWA: 0.15 mg/m3		

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Fibrous.
Odor:	organic
Boiling Point:	No Data
Melting Point:	No Data
Specific Gravity:	No Data
Solubility:	Insoluble in water.
Vapor Density:	No Data
Vapor Pressure:	No Data
Evaporation Rate:	No Data
pH:	No Data
Viscosity:	Not applicable.
Flash Point:	None.
Flash Point Method:	Not applicable.

SECTION 10 - STABILITY and REACTIVITY

Chemical Stability:	Stable under normal conditions.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Conditions to Avoid:	None expected
Incompatible Materials:	No materials to be especially mentioned.
Special Decomposition Products:	See Section 5 of MSDS for hazardous decomposition products during a fire.

SECTION 11 - TOXICOLOGICAL INFORMATION

Carcinogens:							
	ACGIH			IARC		Canada	MEXICO
Fiber Glass (Wool)	A3 Animal Carcinogen			Group 3 - Not Classifiable as to its Carcinogenicity to Humans.			A3 Animal Carcinogen

Cured Binder	No Data			No Data			No Data

Applies to Product Asphalt, Oxidized :

Sensitization: No information available.

Mutagenicity: No information available.

Reproductive Toxicity: No information available.

Teratogenicity: No information available.

Neurological Effects: No information available.

Fiber Glass (Wool) :

Chronic Effects: In October 2001, the International Agency for Research on Cancer (IARC) classified fiber glass wool as Group 3,not classifiable as to its carcinogenicity to humans. The 2001 decision was based on human studies and animal research that have not shown an association between inhalation exposure to dust from fiber glass wool and the development of respiratory disease. This classification replaces the IARC finding in 1987 of a Group 2B designation possibly carcinogenic to humans..

In May 1997, the American Conference of Governmental Industrial Hygienists (ACGIH) adopted an A3 carcinogen classification for glass wool fibers. The ACGIH A3 classification considers glass wool to be carcinogenic in experimental animals at relatively high doses, by routes of administration, at sites, or by mechanisms that it does not consider relevant to worker exposure. It also reviewed the available epidemiological studies and concluded that they do not confirm an increased risk of cancer in exposed humans. Overall, the ACGIH found that the available medical/scientific evidence suggests that glass wool is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

SECTION 12 - ECOLOGICAL INFORMATION

Applies to Product Asphalt, Oxidized :

Ecotoxicity: This material is not expected to cause harm to animals, plants or fish.

Bioaccumulation: Not available.

Biodegradation: Not available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Applies to Product Asphalt, Oxidized :

Waste Disposal: Dispose of in accordance with Local, State, Federal and Provincial regulations.

SECTION 14 - TRANSPORT INFORMATION

IATA Shipping Name: Not Regulated.

MEX Shipping Name : Not Regulated.

SECTION 15 - REGULATORY INFORMATION

Inventory Status

	Japan ENCS	Philippines PICCS	China	South Korea KECL	Australia AICS
Fiber Glass (Wool)	Not listed	Listed	Listed	KE-17630	Listed
Cured Binder	Not listed		Listed	KE-35185	Listed

	TSCA Inventory Status				
Fiber Glass (Wool)	Listed				
Cured Binder	Listed				

SECTION 16 - ADDITIONAL INFORMATION

MSDS Creation Date: July 10, 2002

MSDS Revision Date: May 14, 2012

MSDS Revision Notes: Updated product names, health hazard information

Material Safety Data Sheet

AP Armaflex Insulation

Prepared 04/06 – Replaces 04/04

Armacell LLC
P.O. Box 1038
7600 Oakwood Street Extension
Mebane, NC 27302
(919) 304-3846

I. PRODUCT IDENTIFICATION
Name: AP Armaflex Products: including AP Armaflex Tube, AP Armaflex SS Tube, AP Armaflex Sheet and Rolls, AP Armaflex SA Sheet and Rolls, AP Armaflex Tape, Armaflex Duct Liner and AP Armaflex W.
Description: Expanded, closed-cell, cross-linked rubber type compound.. Available in various sizes and in several forms; e.g., pipe insulation, sheet insulation, roll insulation and insulating tape.

II. DEPARTMENT OF TRANSPORTATION INFORMATION
Shipping name: Not classified. Hazard Class: N/A ID # N/A

III. HMIS (0 = minimal hazard; 4 = severe hazard)
Health = 0 Flammability = 1 Reactivity = 0

IV. PRODUCT CONTENT
This product is classified as an "article" according to Title 29 of the Code of Federal Regulations, OSHA Part 1910.1200©. They are formed to a specific shape or design during manufacture, has end use functions dependent upon their shape and design, and does not release any hazardous chemical under normal conditions of use. This product does NOT contain asbestos or polychlorinated biphenyls.

V. HAZARDOUS INGREDIENTS

(Chemical Identity; Common Name)	C.A.S. No.	%	OSHA PEL	ACGIH TVL
None				

VI. PHYSICAL DATA
APPEARANCE AND COLOR: Flexible and Black, gray or white. BOILING POINT (°F): N/A. VAPOR PRESSURE (mm Hg @ 20°C): N/A. VAPOR DENSITY (Air = 1); N/A. SOLUBILITY IN WATER: N/A. SPECIFIC GRAVITY (H_2O=1): N/A. PERCENT VOLATILE BY WEIGHT (30 min.@275°F): N/A. EVAPORATION RATE (Butyl Acetate=1) : N/A. pH: N/A VOC: N/A.

VII. FIRE AND EXPLOSION HAZARD DATA
FLASH POINT: N/A. RANGE: LEL = N/A. UEL = N/A. EXTINGUISHING MEDIA: Water. SPECIAL FIRE FIGHTING PROCEDURES: Protect fire fighters from toxic products of combustion by wearing self-contained breathing apparatus. UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

VIII. HEALTH HAZARD DATA
PRIMARY ROUTE (S) OF ENTRY: N/A. TARGET ORGANS: N/A. EFFECTS OF OVEREXPOSURE: SKIN AND EYES: N/A. INHALATION: N/A. CARCINOGENICITY: NTP: No IARC Monographs: No OSHA Regulated: No. MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE N/A. FIRST AID PROCEDURES: SKIN AND EYES: N/A. INHALATION N/A. INGESTION N/A.

IX. REACTIVITY DATA
STABILITY N/A. INCOMPATIBILITY: N/A. HAZARDOUS DECOMPOSITION PRODUCTS: N/A. HAZARDOUS POLYMERIZATION: N/A.

X. SPILL OR LEAK PROCEDURES
STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED N/A. WASTE DISPOSAL METHOD: Dispose of container and any unused contents in accordance with Federal, State and Local Waste Disposal Regulations

XI. SPECIAL HANDLING AND USE INFORMATION
VENTILATION: N/A. RESPIRATORY PROTECTION N/A. SKIN AND EYE PROTECTION: N/A.

XII. SPECIAL PRECAUTIONS
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE N/A. OTHER PRECAUTIONS: N/A. WORK SITE ENVIRONMENT: N/A.

The information presented herein is supplied as a guide to those who handle or use this product. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

N/A -not applicable or not available
N/K – none known or not known

Material Safety Data Sheet

Material Name: Aeroflex® Duct Liner, Aeroflex® Plus Duct Liner, Coated Aeroflex® Duct Liner **MSDS No.: 15-MSD-17080-01-D**

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

Product Name(s): Aeroflex® Duct Liner, Aeroflex® Plus Duct Liner, Coated Aeroflex® Duct Liner

Manufacturer:
Owens Corning
One Owens Corning Parkway, World Headquarters
Attn. Product Stewardship
Toledo, OH 43659, USA

Emergency Contacts:
Emergencies ONLY (after 5pm ET and weekends): 1-419-248-5330,
CHEMTREC (24 hours everyday): 1-800-424-9300,
CANUTEC (Canada - 24 hours everyday): 1-613-996-6666.

Health and Technical Contacts:
Health Issues Information (8am-5pm ET): 1-800-GET-PINK,
Technical Product Information (8am-5pm ET): 1-800-GET-PINK.

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

CAS #	Component	Percent by Wt.
65997-17-3	Fibrous Glass (continuous filament) (non-respirable)*	65-90
25104-55-6	Urea, Polymer of phenol and formaldehyde	15-20
N/A	Cured Vinyl/Acrylic Coating	3-17
1344-28-1	Hydrated Alumina	0-6
N/A	Hydrocarbon Polymers	0-3

*As manufactured continuous filament glass fibers are not respirable. Continuous filament glass products that are chopped, crushed or severely mechanically processed during manufacturing or use may contain a very small amount of respirable particulate, some of which may be glass shards. See section 8 of Material Safety Data Sheet for exposure limit data.

Component Related Regulatory Information
This product may be regulated, have exposure limits or other information identified as the following: glass wool fiber, fibrous glass and nuisance particulates.

Component Information/Information on Non-Hazardous Components
No additional information available.

* * * Section 3 - Hazard Identification * * *

Appearance and Odor: Greenish fibrous glass insulation product with black vinyl/acrylic coating on one side.

Emergency Overview
Fire may cause hydrogen chloride and ammonia to be released from this product.

Potential Acute Health Effects

Inhalation:
Dusts and fibers from this product may cause mechanical irritation of the nose, throat, and respiratory tract.

Skin Contact:
Dusts and fibers from this product may cause temporary mechanical irritation to the skin.

Eye Contact:
Dusts and fibers from this product may cause temporary mechanical irritation to the eyes.

Ingestion:
Ingestion of this product is unlikely. However, ingestion of product may produce gastrointestinal irritation and disturbances.

Medical Conditions Aggravated by Exposure:
Chronic respiratory or skin conditions may temporarily worsen from exposure to this product.

Chronic Conditions:
See Section 11 for additional information.

* * * Section 4 - First Aid Measures * * *

Inhalation:
If inhaled, remove the affected person to fresh air. If irritation persists get medical attention.

Skin Contact:
For skin contact, wash with mild soap and running water. Use a washcloth to help remove fibers. To avoid further irritation, do not rub or scratch affected areas. Rubbing or scratching may force fibers into the skin. If irritation persists get medical attention.

Never use compressed air to remove fibers from the skin. If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists get medical attention.

Ingestion:
Ingestion of this material is unlikely. If it does occur, watch the person for several days to make sure that partial or complete intestinal obstruction does not occur. Do not induce vomiting unless directed to do so by medical personnel.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point:	None	**Flash Point Method:**	Not applicable
Upper Flammability Limit:	Not applicable	**Lower Flammability Limit:**	Not applicable
Flammability Classification:	Non-flammable		

Extinguishing Media:
Dry chemical, foam, carbon dioxide, or water fog.

Unusual Fire & Explosion Hazards:

This product may release hydrogen chloride and ammonia in a fire. Evacuate building immediately if this occurs.

Fire-Fighting Instructions:

In a sustained fire use self-contained breathing apparatus (SCBA) and full bunker turnout gear.

Hazardous Combustion Products:

Primary combustion products are nitrogen oxide, carbon monoxide, carbon dioxide, ammonia, hydrogen chloride and water. Other undetermined compounds could be released in small quantities.

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures:

This material will settle out of the air. If concentrated on land, it can then be scooped up for disposal as a non-hazardous waste. This material will sink and disperse along the bottom of waterways and ponds. It cannot easily be removed after it is waterborne; however, the material is non-hazardous in water.

Clean-Up Procedures:

Scoop up material and put into a suitable container for disposal as a non-hazardous waste.

Special Procedures:

None.

* * * Section 7 - Handling and Storage * * *

Handling Procedures:

Keep product in its packaging until use to minimize potential dust generation. Keep work areas clean. Avoid unnecessary handling of scrap material. Wear PPE as described in Section 8. Follow good industrial hygiene practices when handling this material.

Storage Procedures:

No special procedures.

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

Exposure Guidelines:

A: General Product Information

Follow all applicable exposure limits.

B: Component Exposure Limits

ACGIH and OSHA exposure limit lists have been checked for those components with CAS registry numbers.

Fiber Glass Continuous Filament (65997-17-3)

Ingredient	OSHA PEL (8-hr TWA)	ACGIH TLV (8-hr TWA)
Non-respirable fibers and particulate	15 mg/m^3 (total dust) (a)	5 mg/m^3 (inhalable fraction)
Respirable particulate	5 mg/m^3 (respirable dust) (b)	None
Respirable particulate with fiber like dimensions (glass shards)	None Established	None Established

Hydrated Alumina (1344-28-1)
ACGIH: 10 mg/m3 (as Al)
OSHA: 15 mg/m3 (total dust); 5 mg/m3 (respirable dust)

Ventilation:
General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits. Dust collection systems should be used in operations involving cutting or machining and may be required in operations involving power tools.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection:
A properly fitted NIOSH approved N 95 series disposable dust respirator such as the 3M model 8210 (model 8271 in high humidity environments) or equivalent should be used when high dust levels are encountered, the level of glass fibers in the air exceeds the occupational exposure limits, or if irritation occurs.

Skin Protection:
Normal work clothing (long sleeved shirt, long pants, and gloves) is recommended. Skin irritation is known to occur chiefly at the pressure points such as around the neck, wrists, waist and between the fingers.

Eyes/Face Protective Equipment:
Wear safety glasses or goggles.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Green, fibrous insulation	**Odor:**	Organic
Physical State:	Solid	**pH:**	Not applicable
Vapor Pressure (mm Hg @ 20 C):	Not applicable	**Vapor Density (Air=1):**	Not applicable
Boiling Point:	Not applicable	**Solubility (H2O):**	Insoluble
Specific Gravity (Water=1):	Not applicable	**Freezing Point:**	Not applicable
Evaporation Rate (n-Butyl Acetate=1):	Not applicable	**Viscosity:**	Not applicable

Physical Properties: Additional Information
No additional information available.

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Stability:
This is a stable material.

Conditions to Avoid:
None expected.

Incompatible Materials:
None expected.

Hazardous Decomposition Products:
None, except in fire. See section 5 of MSDS for combustion products statement.

Hazardous Polymerization:

Will not occur.

* * * Section 11 - Toxicological Information * * *

Acute Effects:

General Product Information

Dusts may cause mechanical irritation to eyes and skin. Ingestion may cause transient irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. Higher exposures may cause difficulty breathing, congestion, and chest tightness.

Component Analysis - LD50/LC50

No data available.

Carcinogenicity:

Fiber Glass Continuous Filament: The International Agency for Research on Cancer (IARC) in June, 1987, and in October, 2001, categorized fiber glass continuous filament as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify fiber glass continuous filament as a possible, probable, or confirmed cancer causing material.

The American Conference of Governmental Industrial Hygienists (ACGIH) A4 classification, not classifiable as a human carcinogen, for respirable continuous filament glass fibers is based on inadequate data in terms of its carcinogenicity in humans and/or animals.

For respirable continuous filament glass fibers, a TLV-TWA of 1 fiber/cc was adopted to protect workers against mechanical irritation. The TLV-TWA of 5 mg/m3 was adopted for nonrespirable glass filament fiber, measured as inhalable dust, to prevent mechanical irritation of the upper respiratory tract.

Note: There are no known chronic health effects connected with long term use or contact with these products.

Products that are chopped, crushed or severely mechanically processed during manufacture or use may contain a very small amount of respirable glass fiber-like fragments. NIOSH defines “respirable fibers “ as greater than 5 microns in length and less than 3 microns in diameter with an aspect ratio of $\geq$ 5:1(length-to-width ratio).

Chronic Study in Animals: A laboratory test was conducted with a different product (special application glass fiber) with comparable composition and durability. Test animals breathing very high concentrations of respirable fibers on a long-term basis developed fibrosis, lung cancer and mesothelioma.

About 23% of the rats (n=43) exposed to 1022 f/cc for 5 hrs/day, 7 days/week for 52 weeks developed lung tumors (adenoma and carcinoma). Five percent (5%) of the unexposed control group (n=38) developed lung tumors (adenoma and carcinoma).

Five percent (5%) of the rats in the exposed group developed mesothelioma and 12.5% developed advanced fibrosis. None of the rats in the unexposed control group developed mesothelioma and 0.6 % developed advanced fibrosis.

A second group of rats was exposed to a similar concentration of asbestos (respirable amosite fibers) for 5 hours/day, 7 days a week for 52 weeks. 38% of the rats developed lung tumors (adenoma and carcinoma) and 5 % developed mesothelioma. 14.5 % developed advance fibrosis.

Importantly, this result, that is similar disease rates for the special application fiber and amosite asbestos, had been predicted in a 1996 scientific paper (Inhal. Tox. 8:323-343, 1996 ref). That paper specifically stated that in rats all fibers which were durable enough to remain in a rat lung for two (2) years or more would produce the same disease rates if the exposures were the same. While the special application fiber is much less durable than

asbestos, it is stable enough to remain in the rat lung for more than the two (2) year time period. The results of the current study are therefore not unexpected, and they do not indicate that similar disease rates would be seen in longer-lived species or humans, exposed to these fibers.

B: Component Carcinogenicity

Fiber Glass (Continuous Filament) (65997-17-3)

ACGIH: A4 – Not classifiable as a human carcinogen.
IARC: Group 3 "not classifiable as to its carcinogenicity to humans"
June 1987 and October 2001meeting

Hydrated Alumina (1344-28-1)

ACGIH: A4 – Not classifiable as a human carcinogen.

* * * Section 12 - Ecological Information * * *

This product is not anticipated to harm animals, plants or fish.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions:

A: General Product Information

This product , if discarded, is not expected to be a characteristic hazardous waste under RCRA.

B: Component Waste Numbers

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

Disposal Instructions:

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

* * * Section 14 – Transportation Information * * *

US DOT Information

Shipping Name: Not regulated for transport.
Hazard Class: None
UN/NA #: None
Packing Group: None
Required Label(s): None
Additional Info.: None

TDG Information

Shipping Name: Not regulated for transport.
Hazard Class: None
UN/NA #: None
Packing Group: None
Required Label(s): None
Additional Info.: None

Additional Transportation Regulations:

No additional information available.

* * * Section 15 - Regulatory Information * * *

US Federal Regulations:

A: General Product Information

No additional information available

B: Component Analysis

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

None

The following is provided to aide in the preparation of SARA Section 311 and 312 reports.

SARA 311/312	
Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden Release of Pressure Hazard:	No
Reactive Hazard:	No

C: Clean Air Act

The following components appear on the Clean Air Act-1990 Hazardous Air Pollutants List:

None

State Regulations:

A: General Product Information

No additional information available.

B: Component Analysis - State

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Other Regulations:

A: General Product Information

No additional information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Fiber Glass Wool (Fibrous Glass)	65997-17-3	Yes	Yes	Yes
Urea, polymer of phenol and formaldehyde	25104-55-6	Yes	Yes	Exempt
Hydrated Alumina	1344-28-1	Yes	Yes	Yes

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

None

WHMIS Status: Not Controlled
WHMIS Classification: None

* * * Section 16 - Other Information * * *

HMIS and NFPA Hazard Ratings:	Category	HMIS	NFPA
	Acute Health	1	2
	Flammability	0	0
	Reactivity	0	0

NFPA Unusual Hazards: None
HMIS Personal Protection: To be supplied by user depending upon use.

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Key/Legend:

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NFPA = National Fire Protection Association; HMIS = Hazardous Material Identification System; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act; DSL = Canadian Domestic Substance List; EINECS = European Inventory of New and Existing Chemical Substances; WHMIS = Workplace Hazardous Materials Information System; CAA = Clean Air Act

Revision Summary:

This is a revised MSDS, which replaces 15-MSD-17080-01-C with new formatting and updated composition, toxicological, and contact information. Read this information carefully.

Get OC MSDS electronically via Internet: http://www.owenscorning.com or by calling 1-800-GET-PINK.

This is the end of MSDS # 17080-01-D

13

Material Safety Data Sheet

An RPM Company

24 Hour Emergency Phone Numbers:
Medical/Poison Control:
In U.S.: Call 1-800-222-1222
Outside U.S.: Call your local poison control center
Transportation/National Response Center:
1-800-535-5053
1-352-323-3500

NOTE: The National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this MSDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

Section 1 - Chemical Product / Company Information

This Material Safety Data Sheet is available in Canadian French and Hispanic American Spanish upon request.
On peut demader cette fiche signalétique (MSDS) a la langue francaise-canadienne.
Los Datos de Serguridad del Producto pueden obtenerse en Espanol si lo riquiere.

Product Name:	DAPtex® Latex Multi-Purpose Insulating Foam Sealant	**Revision Date:**	03/13/2009
Product UPC Number:	070798188266	**Supersedes:**	09/05/2008
Product Use/Class:	Pressurized Latex Foam	**MSDS Number:**	00077346001
Manufacturer:	**DAP Inc.** **2400 Boston Street Suite 200** **Baltimore, MD 21224-4723** **888-327-8477 (non-emergency matters)**		

Section 2 - Hazards Identification

Emergency Overview: A white to off-white liquid product with a slight alcoholic odor. DANGER! Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion. May cause eye, skin, nose, throat and respiratory tract irritation. Vapors harmful if inhaled. Harmful if swallowed or absorbed through the skin. Contents under pressure. Do not puncture can. Exposure to temperatures above 120 'F may cause can to rupture. This product contains ethylene glycol.

Refer to other MSDS sections for other detailed information.

Effects Of Overexposure - Eye Contact: May cause eye irritation. Corrosive to the eyes! Direct contact with eyes will cause severe irritation and may lead to burns and permanent eye damage including blindness. Mists and vapors may cause moderate to severe eye irritation.

Effects Of Overexposure - Skin Contact: May cause skin irritation and/or dermatitis. May cause allergic skin reaction or sensitization. Harmful if absorbed through the skin. May be corrosive on prolonged contact.

Allergic contact dermatitis is a common effect of occupational exposure to bisphenol A diglycidyl ether. Exposure to bisphenol A diglycidyl ether may result in severe burns to the skin. Eczema, urticaria, photodermatitis, erythema, persistent itching, severe facial swelling, blistering and erythema multiforme have been reported after dermal exposure to bisphenol A diglycidyl ether. Sclerotic skin changes are possible.

Effects Of Overexposure - Inhalation: Harmful if inhaled. Exposure to bisphenol A diglycidyl ether vapors may result in coughing, asthmatic attacks and bronchospasm persisting for several days. Bronchospasm may also occur. Organic acid anhydrides may produce an asthma-rhinitis syndrome, a flu-like syndrome, pulmonary disease-anemia syndrome, or

irritant respiratory effects. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Overexposure to fumes or vapors may cause delayed lung damage and chemical pneumonia.

Effects Of Overexposure - Ingestion: Ingestion of ethylene glycol can cause gastrointestinal irritation, nausea, vomiting, diarrhea and if ingested in sufficient quantities, death. Harmful or fatal if swallowed. If ingested, may cause vomiting, diarrhea, and depressed respiration. Ingestion of bisphenol A diglycidyl ether may results in oral and esophageal burns. May be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Repeated or prolonged exposure may cause skin, respiratory, kidney and liver damage. Prolonged and repeated skin contact may cause irritation and possibly dermatitis. May aggravate existing skin, eye or lung conditions. Prolonged, repeated, or high exposures may cause weakness and depression of the central nervous system.

Ethylene Glycol may cause kidney and liver damage upon prolonged and repeated overexposures. Studies have shown that repeated inhalation of ethylene glycol has produced adverse cardiovascular changes in laboratory animals. Ethylene glycol has been shown to cause birth defects in laboratory animals.

This product contains vinyl acetate which is classified as a class 2B carcinogen by IARC. Vinyl acetate was found to cause cancer in the respiratory tract of laboratory animals. There is no evidence that vinyl acetate causes cancer in humans. The IARC published a monograph on vinyl acetate (1995). In this monograph, IARC indicates "there is inadequate evidence in humans for carcinogenicity of vinyl acetate. There is limited evidence in experimental animals for the carcinogenicity of vinyl acetate." Normally, this lack of conclusive evidence would place a substance in the IARC 3 classification (not classified as a human carcinogen). However, because vinyl acetate is metabolized to acetaldehyde, which has an IARC 2B (possibly carcinogenic to humans) classification, it also has been listed under Category 2B.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

Medical Conditions which May be Aggravated by Exposure: Colds, allergies, eczema, psoriasis, and other skin conditions, emphysema, asthma and other respiratory disorders.

Carcinogenicity:

CAS No.	Chemical Name	ACGIH	OSHA	IARC	NTP
108-05-4	Vinyl acetate	Confirmed animal carcinogen with unknown relevance to humans.	Not Listed.	Possible carcinogen.	Not Listed.

Section 3 - Composition / Information On Ingredients

Chemical Name	CASRN	Wt%
Isopropyl alcohol	67-63-0	1-5
Ethylene glycol	107-21-1	1-5
Dimethyl ether	115-10-6	1-5
Propane	74-98-6	1-5
n-Butane	106-97-8	1-5
Vinyl acetate	108-05-4	0.1-1.0

Section 4 - First Aid Measures

First Aid - Eye Contact: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

First Aid - Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing. If skin irritation persists, call a physician.

First Aid - Inhalation: If inhaled, remove to fresh air. If breathing is difficult, leave the area to obtain fresh air. If continued breathing difficulty is experienced, get medical attention immediately. Move patient to fresh air. Monitor for respiratory distress. If cough or difficulty breathing develops, evaluate for respiratory tract irritation, bronchitis, or pneumonitis. Administer oxygen and assist ventilation as required. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids.

First Aid - Ingestion: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately. Immediately dilute with 4 to 8 ounces (120 to 240 mL) of water or milk (not to exceed 4 ounces/120 mL in a child).

Note to Physician: None.

COMMENTS: If over-exposure occurs, call your poison control center at 1-800-222-1222.

Section 5 - Fire Fighting Measures

Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Store away from caustics and oxidizers. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Containers may explode if exposed to extreme heat. Eliminate sources of ignition: heat, electrical equipment, sparks and flames.

Special Firefighting Procedures: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Wear proper protective equipment as specified in Section 8. Use absorbent material or scrape up dried material and place in container.

Section 7 - Handling And Storage

Handling: KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Keep away from open flames, hot surfaces and sources of ignition. Open all windows and doors or use other means to ensure cross-ventilation and fresh air entry during application and drying. Odor is not an adequate warning for hazardous conditions. Use only with adequate ventilation. Provide fresh air such that chemical odors cannot be detected during use and while drying. Avoid breathing vapor and contact with eyes, skin and clothing. Wash thoroughly after handling. Construction and repair activities can adversely affect indoor air quality. Consult with occupants or a representative (i.e. maintenance, building manager, industrial hygienist, or safety officer) to determine ways to minimize impact.

Intentional misuse by deliberately concentrating and inhaling vapors may be harmful or fatal. Make sure nozzle is directed away from yourself prior to discharge.

Storage: Keep away from heat and sources of ignition. Do not store at temperatures above 120 degrees F. Store containers away from excessive heat and freezing. Protect material from direct sunlight. Store away from caustics and oxidizers.

Section 8 - Exposure Controls / Personal Protection

Chemical Name	CASRN	ACGIH TWA	ACGIH STEL	ACGIH CEIL	OSHA TWA	OSHA STEL	OSHA CEIL	Skin
Isopropyl alcohol	67-63-0	200 PPM	400 PPM	N.E.	400 PPM	N.E.	N.E.	No
Ethylene glycol	107-21-1	N.E.	N.E.	100 MGM3	N.E.	N.E.	N.E.	No
Dimethyl ether	115-10-6	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.	No
Propane	74-98-6	1000 PPM	N.E.	N.E.	1000 PPM	N.E.	N.E.	No
n-Butane	106-97-8	1000 PPM	N.E.	N.E.	N.E.	N.E.	N.E.	No
Vinyl acetate	108-05-4	10 PPM	15 PPM	N.E.	N.E.	N.E.	N.E.	No

Precautionary Measures: Please refer to other sections and subsections of this MSDS.

Engineering Controls: Good general ventilation should be sufficient to control airborne levels. Ensure adequate ventilation, especially in confined areas. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits. Provide sufficient general and/or local exhaust ventilation to maintain exposure below recommended exposure limit. Highly flammable vapors are heavier than air and may accumulate in low areas. Vapors are heavier than air and may spread along floors. Check all low areas for presence of vapor. Refer to OSHA Standards 29 CFR 1910.94 and 29 CFR 1910.107.

Respiratory Protection: If concentrations exceed the exposure limits specified, use of a NIOSH-approved supplied air respirator is recommended. Where the protection factor is exceeded, use of a Self Contained Breathing Apparatus (SCBA) may be necessary. In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. No personal respiratory protective equipment normally required.

Skin Protection: Rubber gloves.

Eye Protection: Goggles or safety glasses with side shields.

Other protective equipment: Not required under normal use.

Hygienic Practices: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

Important: Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); these limits may vary between states.

Note: An employee's skin exposure to substances having a "YES" in the "SKIN" column in the table above shall be prevented or reduced to the extent necessary under the circumstances through the use of gloves, coveralls, goggles or other appropriate personal protective equipment, engineering controls or work practices.

Section 9 - Physical And Chemical Properties

Boiling Range:	Not Established	**Vapor Density:**	Heavier Than Air
Odor:	Slight Alcoholic	**Odor Threshold:**	Not Established
Color:	White to Off-White	**Evaporation Rate:**	Slower Than n-Butyl Acetate
Solubility in H2O:	Not Established	**Specific Gravity:**	1.0
Freeze Point:	Not Established	**pH:**	Between 7.0 and 12.0
Vapor Pressure:	Not Established	**Viscosity:**	Not Established
Physical State:	Liquid	**Flammability:**	Level I Aerosol
Flash Point, F:	Aerosol	**Method:**	(Not Applicable)
Lower Explosive Limit, %:	Not Established	**Upper Explosive Limit, %:**	Not Established

When reported, vapor pressure of this product has been calculated theoretically based on its constituent makeup and has not been determined experimentally.

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Excessive heat and freezing.

Incompatibility: Incompatible with strong bases and oxidizing agents.

Hazardous Decomposition Products: Normal decomposition products, i.e., COx, NOx.

Hazardous Polymerization: Hazardous polymerization will not occur under normal conditions.

Stability: Stable under recommended storage conditions.

Section 11 - Toxicological Information

Product LD50: Not Established **Product LC50:** Not Established

CASRN	Chemical Name	LD50	LC50
67-63-0	Isopropyl alcohol	Rat:5045 mg/kg	Rat:16000 ppm/8H
107-21-1	Ethylene glycol	Rat:4700 mg/kg	Rat:10876 mg/kg
108-05-4	Vinyl acetate	----------	Rat:11400 mg/m3/4H

Significant Data with Possible Relevance to Humans: One animal study showed that in utero exposure (not neonatal) of rats to bisphenol A promotes uterine disruption (thinning of the uterine epithelium during estrus) in offspring, probably by influencing expression and distribution of these receptors.

Section 12 - Ecological Information

Ecological Information: Ecological injuries are not known or expected under normal use.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

EPA Waste Code if Discarded (40 CFR Section 261): D001 if residue remains.

Section 14 - Transportation Information

DOT Proper Shipping Name:	Aerosols, flammable	**Packing Group:**	N.A.
DOT Technical Name:	N.A.	**Hazard Subclass:**	N.A.
DOT Hazard Class:	2.1	**DOT UN/NA Number:**	UN1950

Note: The shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and/or to non-domestic destinations.

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate Health Hazard, Chronic Health Hazard, Fire Hazard, Pressurized Hazard

SARA Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Isopropyl alcohol	67-63-0
Ethylene glycol	107-21-1
Vinyl acetate	108-05-4

Toxic Substances Control Act:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product:

Chemical Name	CAS Number
Non-Hazardous Polymer	Proprietary
Water	7732-18-5

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%:

Chemical Name	CAS Number
Non-Hazardous Polymer	Proprietary
Water	7732-18-5

California Proposition 65:

None.

Section 16 - Other Information

HMIS Ratings:

Health: 1 Flammability: 3 Reactivity: 0 Personal Protection: X

Volatile Organic Compounds (VOC), less water less exempts: g/L: 170.2 lb/gal: 1.4 wt:wt%: 11.3

Volatile Organic Compounds (VOC), less water less exempts, less LVP-VOCs: wt:wt%: 8.9

REASON FOR REVISION: Periodic Update

Legend:

N.A. – Not Applicable
N.E. – Not Established
N.D. – Not Determined
VOC – Volatile Organic Compound
PEL – Permissible Exposure Limit
TLV – Threshold Limit Value
CEIL – Ceiling Exposure Limit
LD50 – Lethal Dose 50
F – Degree Fahrenheit
C – Degree Celsius

ACGIH – American Conference of Governmental Industrial Hygienists
SARA – Superfund Amendments and Reauthorization Act of 1986
NJRTK – New Jersey Right-to-Know Law
OSHA – Occupational Safety and Health Administration
HMIS – Hazardous Materials Identification System
NTP – National Toxicology Program
STEL – Short Term Exposure Limit
LC50 – Lethal Concentration 50
MSDS – Material Safety Data Sheet
CASRN – The Chemical Abstracts Service Registry Number

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. **NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS.** Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

<End of MSDS>

DIVERSITECH EXPANDING TWO-PART A-COMPONENT

10012, 10180, 10600

Issue Date: 5/94 Last Rev: 05/00-5

Prepared By: T. Eberling

M A T E R I A L S A F E T Y D A T A S H E E T

1. IDENTIFICATION

Chemical Product

Diversitech Expanding Two-Part Quick-Cure, A-Component
A-Component for two-component polyurethane foam system

Manufacturer

FOMO PRODUCTS, INC.
P. O. Box 1078
Norton, Ohio 44203

Emergency Overview

Product Information: 1-800-321-5585. In Ohio and outside the United States call (330) 753-4585
Transportation Emergency: CHEMTREC 1-800-424-9300
A-Component is registered by the manufacturer, FOMO PRODUCTS, INC.
International Transportation Emergency: CHEMTREC (703) 527-3887

Product is a urethane foam component that is packaged under pressure (Non-Flammable Compressed Gas). Containers should not be heated above 120°F (49°C) to avoid excessive pressure build-up.

2. COMPOSITION (Hazardous Components)

Chemical Name (common names)	CAS Number	Percentage	LD_{50}	LC_{50}
Fluorocarbon (Non-Flammable Compressed Gas, HCFC	Not Available This Section	10 to 30 percent	N/A	N/A
4,4' – Diphenylmethane Diisocyanate (MDI)	101-68-8	30 to 60 percent	N/A	N/A
Higher Oligomers of MDI (Polymeric MDI)	9016-87-9	30 to 60 percent	N/A	N/A

(NOTE: *See* Section 8 of this MSDS for Exposure Guidelines)

3. HAZARDS IDENTIFICATION

Physical Hazards

Since the containers are pressurized, storage temperature should not exceed 120°F (49°C) in order to avoid excessive pressure build-up and possible container rupture. Also, MDI will react with water to form CO_2 and water insoluble polyureas. This reaction may be vigorous at elevated temperatures and could cause dangerous pressure build-up in tightly closed containers. A-Component has strong adhesive characteristics.

Potential Health Effects

Adverse health effects of this material are related to the concentrations of vapor in the air. Therefore, adequate ven6tilation and respiratory protection should be provided. Spraying MDI as a mist may increase vapor levels of this material.

Entry Route: Effects of Overexposure

Inhalation: May irritate mucous membranes with tightness in chest, coughing, or allergic asthma-like sensitivity. Extensive overexposure can lead to respiratory symptoms like bronchitis and pulmonary edema. These effects are usually reversible.

Overexposure to fluorocarbon may cause lightheadedness, headaches, or lethargy. Persons with cardiac arrhythmia may be at increased risk in severe exposure.

Skin: May cause localized irritation, reddening or swelling. Prolonged or repeated exposure may lead to sensitization and/or dermatitis.

Eyes: May be irritating to eyes. Foam contact can cause physical damage due to adhesive character.

Ingestion: May cause irritation of mucous membranes in the mouth and digestive tract.

4. FIRST AID

Inhalation: If breathing difficulty is experienced, move to area free of exposure. Provide fresh air. If necessary, provide oxygen or artificial respiration by trained personnel and obtain medical attention.

Eye Contact: Flush with clean water for at least 15 minutes and obtain medical attention.

Skin Contact: Use a rag to remove excess foam from skin and remove contaminated clothing. Use of a mild solvent, such as acetone (nail polish remover) or mineral spirits, may help in removing uncured foam residue from clothing or other surfaces (avoid eye contact). Cured foam may be physically removed by persistent washing with soap and water. If irritation develops, use mild skin cream. If it persists, obtain medical attention.

Ingestion: Do not induce vomiting. Drink 1-2 glasses of water or milk. Consult physician. Do not give anything orally to an unconscious person.

5. FIRE FIGHTING MEASURES

High temperatures will raise the pressure in the containers, which may lead to rupturing. Extinguishing media include: dry chemical, carbon dioxide, halon 1211, chemical foam, or water spray if used in large quantities (water contamination will produce carbon dioxide). Wear self-contained breathing apparatus to protect against toxic decomposition by-products, including CO, CO_2, NO, and traces of HCN or HCL. Cured foam is organic and, therefore, will burn in the presence of sufficient heat, oxygen and ignition source. Main hazards associated with burning foam are similar to burning of other organic materials (wood, paper, cotton, etc.), and precautions against exposure should be taken accordingly. Avoid welding or other "hot work" in vicinity of exposed cured foam.

6. ACCIDENTAL RELEASE MEASURES/DISPOSAL CONSIDERATIONS

Wear skin, eye and respiratory protection. Soak up material with absorbent and shovel into chemical waste container. Loosely cover container. Loosely cover container and remove from work area. Decontaminate waste and spill area with a solution of 0.2 – 0.5% liquid detergent and 3 – 8% concentrated ammonium hydroxide in water (5 – 10% sodium bicarbonate may be substituted for ammonium hydroxide). Use 10 parts of solution for each part of the spill and allow to react for at least 10 minute. Allow loosely covered container to stand for several days before disposing in accordance with all applicable federal, state and local regulations.

Before disposing of containers, relieve container of any remaining pressure and material. Residual liquid may be mixed slowly with equal amount of B-component in well ventilated area in order to form solid, low grade foam.

7. HANDLING AND STORAGE

Store in a cool, dry place. Ideal storage temperature is 60°F to 80°F (15.5°C to 26.6°C). Storage above 90°F (32.2°C) will shorten the shelf life. Protect containers from physical abuse. Protect unused product from freezing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Read all product instructions before using. Personal protective equipment should include safety eye wear, chemical resistant gloves, and long sleeve work clothes. Adequate ventilation should also be employed so that vapor levels do not exceed recommended guidelines. If vapor levels are expected to exceed these guidelines, use NIOSH/MSHA approved, positive pressure, supplied air respirator. Exercise good personal hygiene, wash thoroughly after each use.

Exposure Guidelines	OSHA	ACGIH
4,4" – Diphenylmethane Diisocyanate (MDI)	.020 ppm ceiling .200 mg/m^3 ceiling	.005 ppm TWA .051 mg/m^3 TWA
Higher Oligomers of MDI	None Established	None Established
Fluorocarbon (Non-Flammable HCFC)	1,000 ppm TWA	1,000 ppm TWA

(None of the components in this product are listed by IARC, NTP, OSHA or ACGIH as a carcinogen).

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Appearance	:	Amber to dark brown liquid. Froths when released from container.
Odor	:	Slightly musty odor.
Specific Gravity	:	Approximately 1.2 (H_2O = 1)
Boiling Point	:	Fluorocarbon component (Non-Flammable Gas) boils at less than 0°F (-17.7°C). MDI boils at 406°F (208°C).
Flash Point	:	For MDI; 390°F (199°C). For fluorocarbon; none.
Vapor Pressure	:	Contents under pressure have vapor pressure greater than 50 psig (345 Kpa). For MDI liquid – less than 10mm Hg at 77°F (25°C).
Solubility in Water	:	Insoluble, reacts slowly with water during cure; liberating traces of CO_2.
Explosion Data	:	Contents are not known to be sensitive to mechanical impact or static discharge.

10. STABILITY AND REACTIVITY

This product is considered stable under normal and anticipated storage and handling conditions. Do not store above 120°F (49°C). For longest shelf life, avoid storage above 90°F (32.2°C). Avoid alcohols, strong bases or amines and metal compounds (such as small particle metal catalysts). Avoid contamination with water.

11. TRANSPORTATION

Shipping Information

	Containers Less Than 1000 cu. cm. (1 liter) i.e. II-12, 22, 32	**Containers Greater Than 1000 cu. cm. (1 liter) i.e. II-105, 205, 605**
Ground	Consumer Commodity ORM-D	Compressed Gas n.o.s. (fluorocarbon) 2.2 UN 1956 (Non-Flammable Gas Label)
Air	Aerosols, Non-Flammable 2.2 UN 1950 (Non-Flammable Gas Label)	Compressed Gas n.o.s. (Fluorocarbon) 2.2 UN 1956 (Non-Flammable Gas Label)
Water	Aerosols, Non-Flammable 2.2 UN 1950 (with a capacity of 1000 cu. cm. or less) (No Hazard Labels Required) Boxes or Cartons should be marked (Aerosols UN 1950) only. IMDG page #2102	Compressed Gas n.o.s. (Fluorocarbon) 2.2 UN 1956 (Non-Flammable Gas Label) IMDG page # 2124
Exceptions	N/A	
Note	Emergency Response Guide Numbers – Consumer Commodity # 171, for Aerosols and Compressed Gas # 126.	

12. REGULATORY

Toxic Substances Control Act (TSCA)/Designated Substances List (DSL):
All ingredients are listed on the TSCA inventory, as well as the Canadian Designated Substances List.
SARA Title III:
Contains Diphenylmethane Diisocyanate (CAS #101-68-8) and Fluorocarbon containing Chlorodifluoromethane (CAS #75-45-6) which are subject to the reporting requirements of SARA Title III.
Proposition 65
Based on information currently available, this product is not known to contain detectable amounts of any chemicals currently listed under California Proposition 65.

13. OTHER

NFPA: Fire 1; Health 2; Reactivity 1
HMIS: Flammability 1; Health 3; Reactivity 1

The information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof. The manufacturer makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving it will make their own determination as to its suitability for their purposes prior to use. In no event will the manufacturer be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. No representations or warranties, either expressed or implied, of merchantability or fitness for a particular use are made hereunder with respect to this information or the product to which information refers.

Information contained herein is deemed to be reliable, conservative and accurate. FOMO Products, Inc. reserves the right to change the design, specifications or any other features at any time and without notice, while otherwise maintaining regulatory compliance.

LAST REVISION : 05/00-5
APPROVED BY : T. EBERLING
10012, 10180, 10600

ISO 9001 CERTIFIED
FOMO PRODUCTS INC.

DIVERSITECH EXPANDING TWO-PART B-COMPONENT

10012, 10180, 10600

Issue Date: 5/94 Last Rev: 05/00-4

Prepared By: T. Eberling

M A T E R I A L S A F E T Y D A T A S H E E T

1. IDENTIFICATION

Chemical Product

Diversitech Expanding Two-Part Quick-Cure, B-Component
B-Component for two-component polyurethane foam system

Manufacturer

FOMO PRODUCTS, INC.
P. O. Box 1078
Norton, Ohio 44203

Emergency Overview

Product Information: 1-800-321-5585. In Ohio and outside the United States call (330) 753-4585
Transportation Emergency: CHEMTREC 1-800-424-9300
B-Component is registered by the manufacturer, FOMO PRODUCTS, INC.
International Transportation Emergency: CHEMTREC (703) 527-3887

Product is a urethane foam component that is packaged under pressure (Non-Flammable Compressed Gas). Containers should not be heated above 120°F (49°C) to avoid excessive pressure build-up.

2. COMPOSITION (Hazardous Components)

Chemical Name (common names)	CAS Number	Percentage	LD_{50}	LC_{50}
Fluorocarbon (Non-Flammable Compressed Gas, HCFC	Not Available This Section	10 to 30 percent	N/A	N/A

(NOTE: *See* Section 8 of this MSDS for Exposure Guidelines)

3. HAZARDS IDENTIFICATION

Physical Hazards

Since the containers are pressurized, storage temperature should not exceed 120°F (49°C) in order to avoid excessive pressure build-up and possible container rupture. If accidental contact occurs, follow the appropriate first aid procedure described in Section 4 of this MSDS.

Potential Health Effects

The mixture has not been tested. However, it is assumed that the mixture presents the same health hazards as do the components present at a one percent or greater level (Fluorocarbon). Adequate ventilation should be provided to avoid exceeding the exposure limits listed in Section 8 of this MSDS.

Entry Route: Effects of Overexposure

Inhalation: Vapor reduces oxygen available for breathing and is heavier than air. May cause dizziness, headaches, lethargy, etc. Inhalation of high concentrations of vapor is harmful and may cause heart irregularities. Persons with cardiac arrhythmia may be at increased risk in severe exposure.

Skin: May cause localized irritation. Direct, severe, or prolonged exposure may lead to frostbite.

Eyes: May be irritating to eyes.

Ingestion: May be slightly irritating to mucous membranes.

4. FIRST AID

Inhalation: If breathing difficulty is experienced, move to area free of exposure. Provide fresh air. If necessary, provide oxygen or artificial respiration by trained personnel and obtain medical attention.

Eye Contact: Flush with clean water for at least 15 minutes and obtain medical attention.

Skin Contact: Wipe off liquid with a rag or paper towel and wash thoroughly with soap and water. If irritation develops, use a mild skin cream. If irritation persists, obtain medical attention.

Ingestion: Drink 1-2 glasses of water or milk. If B-Component only is ingested, induce vomiting and consult physician.

5. FIRE FIGHTING MEASURES

High temperatures will raise the pressure in the containers, which may lead to rupturing. Extinguishing media include: dry chemical, carbon dioxide, halon 1211, chemical foam, or water spray if used in large quantities (water contamination will produce carbon dioxide). Wear self-contained breathing apparatus to protect against toxic decomposition by-products, including CO, CO_2, NO, and traces of HCN or HCL. Cured foam is organic and, therefore, will burn in the presence of sufficient heat, oxygen and ignition source. Main hazards associated with burning foam are similar to burning of other organic materials (wood, paper, cotton, etc.), and precautions against exposure should be taken accordingly. Avoid welding or other “hot work” in vicinity of exposed cured foam.

6. ACCIDENTAL RELEASE MEASURES/DISPOSAL CONSIDERATIONS

Provide ventilation and isolate area. Absorb spill with sawdust or vermiculite and dispose of in accordance with all applicable federal, state, and local regulations. Wash spill area thoroughly with soap and water. Avoid uncontrolled reactions with isocyanates (such as Diversitech A-Component).

Before disposing of containers, relieve container of any remaining pressure and contents. Liquid residue may be mixed slowly with equal amount of A-component in well ventilated area in order to form solid, low grade foam.

7. HANDLING AND STORAGE

Store in a cool, dry place. Ideal storage temperature is 60°F to 80°F (15.5°C to 26.6°C). Storage above 90°F (32.2°C) will shorten the shelf life. Protect containers from physical abuse. Protect unused product from freezing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Read all product instructions before using. Personal protective equipment should include safety eye wear, chemical resistant gloves, and long sleeve work clothes. Adequate ventilation should also be employed so that vapor levels do not exceed recommended guidelines. If vapor levels are expected to exceed these guidelines, use NIOSH/MSHA approved, positive pressure, supplied air respirator. Exercise good personal hygiene, wash thoroughly after each use.

Exposure Guidelines	OSHA	ACGIH
Fluorocarbon (Non-Flammable Compressed Gas, HCFC)	1,000 ppm TWA	1,000 ppm TWA

(None of the components in this product are listed by IARC, NTP, OSHA or ACGIH as a carcinogen).

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Appearance	:	Light yellow to amber colored liquid.
Odor	:	Slight fluorocarbon and amine odor.
Specific Gravity	:	Approximately 1.2 ($H_2O = 1$)
Boiling Point	:	Fluorocarbon component (Non-Flammable Gas) boils at less than 0°F (-17.7°C). Other components boil at temperatures greater than 200°F (93.3°C).
Flash Point	:	For fluorocarbon – None (Non-Flammable). For other components – Not determined
Vapor Pressure	:	Contents under pressure have vapor pressure greater than 50 psig (345 Kpa). After release from container, the vapor pressure is very low (not determined).
Solubility in Water	:	Partly soluble, does not react.
Explosion Data	:	Contents are not known to be sensitive to mechanical impact or static discharge.

10. STABILITY AND REACTIVITY

This product is considered stable under normal and anticipated storage and handling conditions. Do not store above 120°F (49°C). For longest shelf life, avoid storage above 90°F (32.2°C). Avoid uncontrolled reactions with isocyanates (*i.e.* A-Component).

11. TRANSPORTATION

Shipping Information

	Containers Less Than 1000 cu. cm. (1 liter) i.e. II-12, 22, 32	**Containers Greater Than 1000 cu. cm. (1 liter) i.e. II-105, 205, 605**
Ground	Consumer Commodity ORM-D	Compressed Gas n.o.s. (Fluorocarbon) 2.2 UN 1956 (Non-Flammable Gas Label)
Air	Aerosols, Non-Flammable 2.2 UN 1950 (Non-Flammable Gas Label)	Compressed Gas n.o.s. (Fluorocarbon) 2.2 UN 1956 (Non-Flammable Gas Label)
Water	Aerosols, Non-Flammable 2.2 UN 1950 (with a capacity of 1000 cu. cm. or less) (No Hazard Labels Required) Boxes or Cartons should be marked (Aerosols UN 1950) only. IMDG page # 2102	Compressed Gas n.o.s. (Fluorocarbon) 2.2 UN 1956 (Non-Flammable Gas Label) IMDG page # 2124
Exceptions	N/A	
Note	Emergency Response Guide Numbers – Consumer Commodity # 171, for Aerosols and Compressed Gas # 126.	

12. REGULATORY

Toxic Substances Control Act (TSCA)/Designated Substances List (DSL):
All ingredients are listed on the TSCA inventory, as well as the Canadian Designated Substances List.
SARA Title III:
Contains Fluorocarbon containing Chlorodifluoromethane (CAS #75-45-6) subject to the reporting requirements of SARA Title III.
Proposition 65
Based on information currently available, this product is not known to contain detectable amounts of any chemicals currently listed under California Proposition 65.

13. OTHER

NFPA: Fire 1; Health 2; Reactivity 1
HMIS: Flammability 1; Health 3; Reactivity 1

The information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof. The manufacturer makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving it will make their own determination as to its suitability for their purposes prior to use. In no event will the manufacturer be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. No representations or warranties, either expressed or implied, of merchantability or fitness for a particular use are made hereunder with respect to this information or the product to which information refers.

LAST REVISION : 05/00-4
APPROVED BY : T. EBERLING
1012, 10180, 10600

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name	**Alka-brite Plus (4120)**
CAS #	Mixture
Product use	Coil Cleaner / Degreaser
Manufacturer	Nu-Calgon 2008 Altom Court St. Louis, MO 63146 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. Hazards Identification

Emergency overview	DANGER CAUSES EYE BURNS. CAUSES SKIN BURNS.
Potential short term health effects	
Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Eyes	Causes chemical burns. May cause blindness.
Skin	Causes chemical burns. Harmful contact may not cause immediate pain.
Inhalation	May cause respiratory tract irritation or chemical burns.
Ingestion	Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.
Target organs	Eyes. Respiratory system. Skin.
Chronic effects	Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis.
Signs and symptoms	The product causes burns of eyes, skin and mucous membranes.
OSHA Regulatory Status	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Potential environmental effects	Components of this product have been identified as having potential environmental concerns.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Sodium hydroxide	1310-73-2	10 - 30
Alkyl polyglycoside	110615-47-9	1 - 5

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 15 minutes. Obtain medical attention immediately.
Skin contact	Immediately flush with cool water for 15 minutes while removing contaminated clothing and shoes. Discard or wash well before reuse. Obtain medical advice immediately.
Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Ingestion	Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS/OSHA criteria.
Extinguishing media	
Suitable extinguishing media	Water spray. Foam. Carbon dioxide. Dry chemical.

Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of carbon.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Environmental precautions	Do not discharge into lakes, streams, ponds or public waters.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills to original containers for re-use.

7. Handling and Storage

Handling	Do not get in eyes, on skin or on clothing. Avoid breathing vapors or mists of this product. Use good industrial hygiene practices in handling this material. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling.
Storage	Keep out of the reach of children. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Exposure limits

Ingredient(s)	Exposure Limits
Alkyl polyglycoside	**ACGIH-TLV** Not established **OSHA-PEL** Not established
Sodium hydroxide	**ACGIH-TLV** Ceiling: 2 mg/m3 **OSHA-PEL** TWA: 2 mg/m3

Engineering controls	General ventilation normally adequate.
Personal protective equipment	
Eye / face protection	Wear chemical goggles.
Hand protection	Rubber gloves. Confirm with a reputable supplier first.
Skin and body protection	As required by employer code.
Respiratory protection	Avoid breathing mists or vapors. Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
General hygiene considerations	Use good industrial hygiene practices in handling this material. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Liquid.

Color	Brown
Form	Liquid
Odor	Characteristic, Mild
Odor threshold	Not available
Physical state	Liquid
pH	14 (Concentrate)
Melting point	Not available
Freezing point	32.00 °F (0 °C)
Boiling point	212.00 °F (100 °C)
Pour point	Not available
Evaporation rate	Not available
Flash point	None to boiling
Auto-ignition temperature	Not available
Flammability limits in air, lower, % by volume	Not available
Flammability limits in air, upper, % by volume	Not available
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	1.26
Octanol/water coefficient	Not available
Solubility (H2O)	Complete
VOC (Weight %)	Not available
Viscosity	Not available
Percent volatile	75

10. Stability and Reactivity

Reactivity	Reacts violently with acids. This product may react with strong oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Acids. Oxidizing agents.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
Alkyl polyglycoside	Not available
Sodium hydroxide	Not available

Component analysis - Oral LD50

Ingredient(s)	LD50
Alkyl polyglycoside	5000 mg/kg rat
Sodium hydroxide	Not available

Effects of acute exposure

Eye	Causes chemical burns. May cause blindness.
Skin	Causes chemical burns. Harmful contact may not cause immediate pain.
Inhalation	May cause respiratory tract irritation or chemical burns.
Ingestion	Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.

Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.

Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.
Name of Toxicologically Synergistic Products	Not available

12. Ecological Information

Ecotoxicity Components of this product have been identified as having potential environmental concerns.

Ecotoxicity - Freshwater Fish - Acute Toxicity Data

Sodium hydroxide	1310-73-2	96 Hr LC50 Oncorhynchus mykiss: 45.4 mg/L [static]

Persistence / degradability	Not available
Bioaccumulation / accumulation	Not available
Mobility in environmental media	Not available
Environmental effects	Not available
Aquatic toxicity	Not available
Partition coefficient	Not available
Chemical fate information	Not available
Other adverse effects	Not available

13. Disposal Considerations

Disposal instructions	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

U.S. Department of Transportation (DOT)

Basic shipping requirements:

Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (SODIUM HYDROXIDE RQ = 5000 lbs)
Hazard class	8
UN number	UN3266
Packing group	II
Additional information:	
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	<0.3 Gallon - Limited Quantity
ERG number	154

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

Proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (SODIUM HYDROXIDE)
Hazard class	8
UN number	UN3266
Packing group	II
Additional information:	
Special provisions	16
Packaging exceptions	<1L - Limited Quantity

15. Regulatory Information

Canadian federal regulations 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.

Canada - WHMIS - Ingredient Disclosure List

Sodium hydroxide	1310-73-2	1 %

WHMIS status Controlled

WHMIS classification Class E - Corrosive Material

WHMIS labeling

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

Sodium hydroxide	1310-73-2	1000 Lb final RQ; 454 kg final RQ

U.S. - CWA (Clean Water Act) - Hazardous Substances

Sodium hydroxide	1310-73-2	Present

CERCLA (Superfund) reportable quantity

Sodium hydroxide: 1000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Clean Air Act (CAA) Not available

Clean Water Act (CWA) Not available

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances

Sodium hydroxide	1310-73-2	Present

U.S. - Louisiana - Reportable Quantity List for Pollutants

Sodium hydroxide	1310-73-2	1000 Lb final RQ; 454 kg final RQ

U.S. - Massachusetts - Right To Know List

Sodium hydroxide	1310-73-2	Present

U.S. - Minnesota - Hazardous Substance List

Sodium hydroxide	1310-73-2	Present

U.S. - New Jersey - Right to Know Hazardous Substance List

Sodium hydroxide	1310-73-2	sn 1706

U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Sodium hydroxide	1310-73-2	1000 Lb RQ (air); 100 lb RQ (land/water)

U.S. - Pennsylvania - RTK (Right to Know) List

Sodium hydroxide	1310-73-2	Environmental hazard

U.S. - Rhode Island - Hazardous Substance List

Sodium hydroxide	1310-73-2	Toxic; Flammable

Inventory name

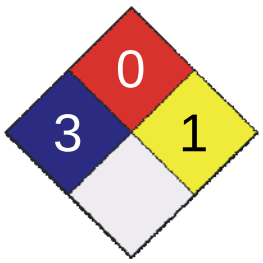
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/	3
Flammability		0
Physical Hazard		1
Personal Protection		X



Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date 07-Jun-2011

Effective date 31-Jul-2011

Expiry date 31-Jul-2014

Prepared by Nu-Calgon Technical Service (314) 469-7000

Other information For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.

MATERIAL SAFETY DATA SHEET

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Name	Phone Number			CHEMTREC
Nu-Calgon Wholesaler, Inc.	(314) 469-7000 / (800) 554-5499			(800) 424-9300
Street Address	**City**	**State**	**Postal Code**	**Last Update**
2008 Altom Court	St. Louis	MO	63146-4151	1/25/07
Product Name	**Product Number**	**Product Use**		**EPA Registration #**
CalClean, Special HD	4143	Heavy Duty Cleaner/Degreaser		N/A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	% By Wt.	CAS Number	TLV	PEL
Sodium Metasilicate	3-6%	6834-92-0	None Established	None Established
Nonionic Surfactant	1-3%	Proprietary	None Established	None Established
Potassium Hydroxide	1-3%	1310-58-3	2mg/m3 (TWA/STEL)	2mg/M3
Sodium Tripolyphosphate	3-6%	7758-29-4	None Established	None Established

SECTION 3 – HAZARD IDENTIFICATION

Emergency Overview: Alkaline detergent. Do not get in eyes, on skin or clothing. Avoid breathing spray or mist. Use only with adequate personal protection equipment.

Potential Health Effects

Eyes: Prolonged contact with eyes will cause severe irritation, possibly burns and permanent damage..

Skin: Contact with skin can cause moderate to severe irritation with pain, possibly produce chemical burns; irritation may be delayed.

Ingestion: Harmful if swallowed - may cause burns of the mouth, throat and stomach if ingested.

Inhalation: Inhalation of generated mists or spray may cause respiratory irritation or chemical burn of mouth, throat, and stomach.

Chronic Exposure: None currently known.

Carcinogenicity: None

Medical Conditions Aggravated be Exposure: An existing dermatitis.

SECTION 4 – FIRST AID MEASURES

Eyes: .Flush eyes with water for at least 30 minutes and call a physician immediately. Speed of action is essential.

Skin: Remove contaminated clothing. Wash with large amounts of soap and water. If skin still feels slippery or if irritation persists, continue washing. Consult a physician in the case of any prolonged irritation

Ingestion: Do not induce vomiting. Immediately give large quantities of water or (preferably) milk and call a physician. Speed of action is essential.

Inhalation: Remove to fresh air. Start artificial respiration if necessary. Oxygen may be administered. Call a physician.

SECTION 5 – FIREFIGHTING MEASURES

Flash Point: None to Boiling °F

Autoignition Temp: N/A°C/N/A°F

Hazardous Products of Combustion: Burning may produce oxides of carbon and other substances.

Flammable Limits in Air: N/A

Extinguishing Media: Product is non-combustible. Water Spray (Fog), Dry Chemical; CO2; or Foam may be used where product is stored.

Fire and Explosion Hazards: None

Special Firefighting Procedures: Do not enter confined fire-spaces without protective clothing and self-contained air supply.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Leak: Before attempting clean up, refer to personal protection information. Do not touch or walk through spilled material. Stop leak if you can without risk. Dike ahead of large spills to prevent run-off. Mop, pump or take up with sand or other inert absorbent and reclaim into containers for reuse, recycle or proper disposal.

SECTION 7 – HANDLING AND STORAGE

Handling Procedures and Equipment: Avoid contact with corrosion sensitive metals, leather and wood. Do not get in eyes, on skin or clothing. Sprays and generated mists can be irritating. Use only according to dilution instructions and with adequate protective clothing.

Storage Requirements: Keep container closed when not in use. Wash thoroughly after handling. D.O.T. Classification: Not Regulated

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Specific use conditions (spraying/confined spaces) where regulatory limits for KOH are exceeded, may require local exhaust ventilation to prevent release of mist &/or vapors into work environment. If ventilation in not adequate, use NIOSH/MSHA approved respirator with alkaline mist/gas cartridge & full face piece.

Eye Protection: Close fitting safety glasses/goggles/ face shield depending upon conditions of use.

Protective Clothing: Impervious protective clothing appropriate to minimize contact (ie: rubber boots, apron, faceshield) especially where sprayback/misting conditions exist. Rubber protective gloves.

Exposure Guidelines: KOH TLV = 2mg/M3. Eye wash station and safety shower in handling area.

Specific Engineering Controls (such as ventilation, enclosed process): Insure adequate ventilation to control KOH airborne concentration below TLV of 2Mg/M3. Eye wash station and safety shower in handling area.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid	**Freezing Point:** 0°C/32°F	**% Volatile by Weight:** ~81%
Color: Opal	**Vapor Density [air =1]:** Not Determined	**Evaporation Rate:** (vs. H2O):About the same.
Odor: Mild, Pleasant Odor	**Vapor Pressure:** Not Determinded	**Specific Gravity:** (H2O=1): 1.13 (+/-0.005)
Boiling Point: 100°C/212°F	**Solubility in Water:** Complete	**pH (concentrate):** 13.2 (=/-0.5)

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability: Stable

Hazardous Polymerization: None

Incompatibilities: Strong acids/oxidizers. Do not mix with chlorinated detergents (bleach).

Reactive Conditions to avoid: Do not mix with chlorinated detergents (bleach) or any other chemicals.

Decomposition Products: Burning may produce oxides of carbon and other substances.

SECTION 11 – TOXICOLOGICAL INFORMATION

Hazardous Ingredients	CAS #	EINECS #	LD 50 of Ingredient (Specify Species)	LC50 of Ingredient (Specify Species)
Potassium Hydroxide	1310-58-3		365 mg/kg (Oral; Rat)	Not Determined
Nonionic Surfactant	Proprietary		>5.0 g / kg (Oral ; Rat)	Not Determined
Sodium Metasilicate	6834-92-0		1280 mg/kg (Oral; Rat)	Not Determined
Sodium Tripolyphosphate	7758-29-4	231-838-7	3120 mg/kg (oral; Rat)	Not Determined

SECTION 12 – ECOLOGICAL INFORMATION

Hazardous Ingredients	Aquatic Toxicity Data
Potassium Hydroxide	LC50 (96 hr) = 179mg/l (Fathead Minnow)
Nonionic Surfactant	Not Determined
Sodium Metasilicate	LC50 (96 hr) = 247 mg/l (Daphnia Magna)
Sodium Tripolyphosphate	EC50 (48 hr) = >1,000 mg/l (Daphnia Magna)

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of in an approved waste facility according to Federal, State and local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

Special Shipping Information: No Data.

Purview	Proper Shipping Name	UN Number	Packing Group	Hazard Class
DOT (Land)	Not Regulated			
IMO (Water)	No Data.			
ICAO (Air)	No Data.			

SECTION 15 – REGULATIORY INFORMATION

WHMIS Classification: (Workplace Hazardous Material Information System)	Class E - Corrosive Material
SARA Title III: (Superfund Amendments & Reauthorization Act)	Contains no Section 313 listed substances subject to reporting requirement.
OSHA: (Occupational Safety & Health Administration)	OSHA Hazardous - Acute hazard
TSCA: (Toxic Substance Control Act)	All ingredients are TSCA registered.
VOC: (volatile Organic Compounds)	Less than 1%
CPR: (Canadian Controlled Products Regulations)	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations.
EINECS: (European Inventory of Existing Commercial Chemical Substances)	No Data.
DSL / NDSL: (Canadian Domestic Substance List)(Non-Domestic Substance List)	All ingredients are listed on the Canadian DSL.
CERCLA: (Comprehensive Response Compensation & Liability Act)	RQ = >10,000 lbs (KOH)
IDL: (Canadian Ingredient Disclosure List)	Sodium metasilicate and potassium hydroxide are listed.
NFPA (HMIS) Rating: (Hazardous Materials Identification System)	Health = 2 Flammability = 0 Reactivity = 1

SECTION 16 – OTHER INFORMATION

No Data.

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name	**Degreasing Solvent Low VOC**
CAS #	Mixture
Product use	Degreaser
Manufacturer	Nu-Calgon 2008 Altom Court St. Louis, MO 63146 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. Hazards Identification

Emergency overview	WARNING COMBUSTIBLE LIQUID AND VAPOR. CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. May cause chronic toxic effects.
Potential short term health effects	
Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Eyes	Causes irritation or blurred vision.
Skin	May cause irritation.
Inhalation	Excessive intentional inhalation may cause respiratory tract irritation and central nervous system effects (headache, dizziness).
Ingestion	May cause stomach distress, nausea or vomiting. Aspiration of material into lungs can cause chemical pneumonitis.
Target organs	Eyes. Kidney. Liver. Respiratory system. Skin.
Chronic effects	Prolonged or repeated overexposure can cause liver and kidney damage. Prolonged or repeated exposure can cause drying, defatting and dermatitis.
Signs and symptoms	Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
OSHA Regulatory Status	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Potential environmental effects	See section 12.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Distillates (petroleum), light hydrotreated	64742-47-8	40 - 70
P-Chlorotoluene	106-43-4	3 - 7
Benzene, 1-chloro-4(trifluoromethyl)-	98-56-6	10 - 30
O-Chlorotoluene	95-49-8	10 - 30

4. First Aid Measures

First aid procedures	
Eye contact	Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.
Skin contact	Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.
Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Ingestion	Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.
Notes to physician	Treat patient symptomatically.

General advice	Keep away from sources of ignition. No smoking. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Combustible by WHMIS/OSHA criteria.
Extinguishing media	
Suitable extinguishing media	Dry chemical. Water spray. Foam.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Hydrogen fluoride. Oxides of carbon. Hydrogen chloride.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Environmental precautions	Do not discharge into lakes, streams, ponds or public waters.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.
Methods for cleaning up	Remove sources of ignition. Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills to original containers for re-use.

7. Handling and Storage

Handling	Use good industrial hygiene practices in handling this material. When using do not eat or drink. Avoid contact with skin and clothing. Avoid contact with eyes. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid breathing vapors or mists of this product.
Storage	Keep out of reach of children. Do not store at temperatures above 120°F (49°C). Store in a closed container away from incompatible materials. Keep away from heat and flame.

8. Exposure Controls / Personal Protection

Exposure limits

Ingredient(s)	Exposure Limits
Benzene, 1-chloro-4(trifluoromethyl)-	**ACGIH-TLV** Not established **OSHA-PEL** Not established
Distillates (petroleum), light hydrotreated	**ACGIH-TLV** Not established **OSHA-PEL** Not established
O-Chlorotoluene	**ACGIH-TLV** TWA: 50 ppm **OSHA-PEL** Not established
P-Chlorotoluene	**ACGIH-TLV** Not established **OSHA-PEL** Not established

Engineering controls General ventilation normally adequate.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields.

Hand protection Rubber gloves. Confirm with a reputable supplier first.

Skin and body protection As required by employer code.

Respiratory protection Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.
When using do not eat or drink.
Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Clear
Color	Not available
Form	Liquid
Odor	Solvent
Odor threshold	Not available
Physical state	Liquid
pH	Not available
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Pour point	Not available
Evaporation rate	Not available
Flash point	105 °F (40.55 °C) Pensky-Martens Closed Cup
Auto-ignition temperature	Not available
Flammability limits in air, lower, % by volume	Not available
Flammability limits in air, upper, % by volume	Not available
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	Not available

Octanol/water coefficient	Not available
Solubility (H2O)	Not available
VOC (Weight %)	Not available
Viscosity	Not available
Percent volatile	Not available

10. Stability and Reactivity

Reactivity	This product may react with strong oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Avoid high temperatures. Do not mix with other chemicals.
Incompatible materials	Acids. Oxidizers. Reducing agents.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon. Hydrogen chloride. Hydrogen fluoride.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
Benzene, 1-chloro-4(trifluoromethyl)-	33 mg/l/4h rat; 20000 Mg/m3/4H mouse
Distillates (petroleum), light hydrotreated	5.2 mg/l/4h rat
O-Chlorotoluene	38 mg/l/4h rat
P-Chlorotoluene	24040 Mg/m3/4H mouse

Component analysis - Oral LD50

Ingredient(s)	LD50
Benzene, 1-chloro-4(trifluoromethyl)-	6800 mg/kg rat; 11500 mg/kg mouse
Distillates (petroleum), light hydrotreated	5000 mg/kg rat
O-Chlorotoluene	1659 mg/kg rat
P-Chlorotoluene	1920 mg/kg rat; 1900 mg/kg mouse; 3750 mg/kg guinea pig

Effects of acute exposure

Eye	Causes irritation or blurred vision.
Skin	May cause irritation.
Inhalation	Excessive intentional inhalation may cause respiratory tract irritation and central nervous system effects (headache, dizziness).
Ingestion	May cause stomach distress, nausea or vomiting. Aspiration of material into lungs can cause chemical pneumonitis.

Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Prolonged or repeated overexposure can cause liver and kidney damage.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.
Name of Toxicologically Synergistic Products	Not available

12. Ecological Information

Ecotoxicity Components of this product have been identified as having potential environmental concerns.

Ecotoxicity - Freshwater Fish - Acute Toxicity Data

Benzene, 1-chloro-4(trifluoromethyl)-	98-56-6	48 Hr LC50 Lepomis macrochirus: 11.5-15.8 mg/L [static]
Distillates (petroleum), light hydrotreated	64742-47-8	96 Hr LC50 Pimephales promelas: 45 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 2.2 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 2.4 mg/L [static]
O-Chlorotoluene	95-49-8	96 Hr LC50 Brachydanio rerio: 70-100 mg/L [static]
P-Chlorotoluene	106-43-4	96 Hr LC50 Brachydanio rerio: 24 mg/L [static]

Ecotoxicity - Water Flea - Acute Toxicity Data

Benzene, 1-chloro-4(trifluoromethyl)-	98-56-6	48 Hr EC50 Daphnia magna: 3.68 mg/L
Distillates (petroleum), light hydrotreated	64742-47-8	96 Hr LC50 Den-dronereides heteropoda: 4720 mg/L
O-Chlorotoluene	95-49-8	24 Hr EC50 Daphnia magna: 20 mg/L
P-Chlorotoluene	106-43-4	48 Hr EC50 Daphnia magna: 3.57 mg/L

Persistence / degradability Not available

Bioaccumulation / accumulation Not available

Mobility in environmental media Not available

Environmental effects Not available

Aquatic toxicity Not available

Partition coefficient Not available

Chemical fate information Not available

Other adverse effects Not available

13. Disposal Considerations

Disposal instructions Dispose in accordance with all applicable regulations.

Waste from residues / unused products Not available

Contaminated packaging Not available

14. Transport Information

U.S. Department of Transportation (DOT)

Basic shipping requirements:

Proper shipping name Flammable liquids, n.o.s. (DISTILLATES (PETROLEUM), LIGHT HYDROTREATED)

Hazard class 3

UN number UN1993

Packing group III

Additional information:

Special provisions B1, B52, IB3, T4, TP1, TP29

Packaging exceptions 150

ERG number 128

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

Proper shipping name	FLAMMABLE LIQUID, N.O.S. (DISTILLATES (PETROLEUM), LIGHT HYDROTREATED)
Hazard class	3
UN number	UN1993
Packing group	III
Additional information:	
Special provisions	16

15. Regulatory Information

Canadian federal regulations 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.

Canada - WHMIS - Ingredient Disclosure List

O-Chlorotoluene	95-49-8	1 %

WHMIS status Controlled

WHMIS classification Class B - Division 3 - Combustible Liquid, Class D - Division 2B

WHMIS labeling

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. - CAA (Clean Air Act) - HON Rule - SOCMI Chemicals

O-Chlorotoluene	95-49-8	Group III
P-Chlorotoluene	106-43-4	Group III

U.S. - CAA (Clean Air Act) - Reactivity Factors for VOCs in Aerosol Coatings

Benzene, 1-chloro-4(trifluoromethyl)-	98-56-6	0.11 G Ozone/g VOC Reactivity Factor

U.S. - CAA (Clean Air Act) - VOCs with Negligible Photochemical Reactivity

Benzene, 1-chloro-4(trifluoromethyl)-	98-56-6	Present

U.S. - CAA (Clean Air Act) - Volatile Organic Compounds (VOCs) in SOCMI

O-Chlorotoluene	95-49-8	Present
P-Chlorotoluene	106-43-4	Present

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Clean Water Act (CWA) Not available

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances

O-Chlorotoluene	95-49-8	Present

U.S. - Massachusetts - Right To Know List

O-Chlorotoluene	95-49-8	Present
P-Chlorotoluene	106-43-4	Present

U.S. - Minnesota - Hazardous Substance List

O-Chlorotoluene	95-49-8	Skin

U.S. - New Jersey - Right to Know Hazardous Substance List

O-Chlorotoluene	95-49-8	sn 1425

U.S. - Pennsylvania - RTK (Right to Know) List

O-Chlorotoluene	95-49-8	Present
P-Chlorotoluene	106-43-4	Environmental hazard

U.S. - Rhode Island - Hazardous Substance List

O-Chlorotoluene	95-49-8	Toxic (skin)

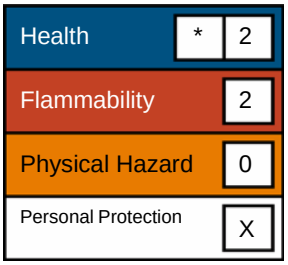
Inventory name

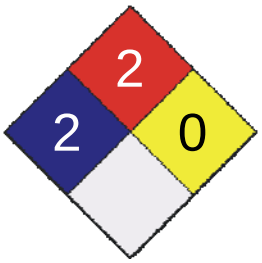
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0





Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

Issue date 13-May-2013

Effective date 01-Jun-2013

Expiry date 01-Jun-2016

Prepared by Dell Tech Laboratories Ltd. (519) 858-5021

Other information For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.

This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.

Material Safety Data Sheet
The Dow Chemical Company

Product Name: Propylene Glycol Industrial Grade

Issue Date: 12/02/2013
Print Date: 06 Dec 2013

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
Propylene Glycol Industrial Grade

COMPANY IDENTIFICATION
The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
United States

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview
Color: Colorless
Physical State: Liquid.
Odor: Odorless
Hazards of product:

Stay out of low areas.

OSHA Hazard Communication Standard
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects
Eye Contact: May cause slight temporary eye irritation. Corneal injury is unlikely. Mist may cause eye irritation.
Skin Contact: Prolonged contact is essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin.
Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat).
Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.
Effects of Repeated Exposure: In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

3. Composition Information

Component	CAS #	Amount
Propylene glycol	57-55-6	> 99.5 %

4. First-aid measures

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Inhalation: Move person to fresh air; if effects occur, consult a physician.
Skin Contact: Wash skin with plenty of water.
Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Extinguishing Media to Avoid: Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.
Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Keep personnel out of low areas. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Any absorbent material. Collect in suitable and properly labeled open containers. Wash the spill site with large quantities of water. Large spills: Dike area to contain spill. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling
General Handling: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage
Store away from direct sunlight or ultraviolet light. Keep container tightly closed when not in use. Store in a dry place. Protect from atmospheric moisture. Store in the following material(s): Stainless steel. Aluminum. Plasite 3066 lined container. 316 stainless steel. Opaque HDPE plastic container.

Shelf life: Use within	**Maximum storage temperature**
12 Months	40 °C 104 °F

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Propylene glycol	WEEL	TWA Aerosol.	10 mg/m3

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.
Skin Protection: No precautions other than clean body-covering clothing should be needed.
Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.
Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.
Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls
Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance	
Physical State	Liquid.
Color	Colorless
Odor	Odorless
Odor Threshold	No test data available
pH	Not applicable
Melting Point	< -20 °C (< -4 °F) *EU Method A.1 (Melting / Freezing Temperature)*
Freezing Point	< -20 °C (< -4 °F) *EC Method A1*
Boiling Point (760 mmHg)	184 °C (363 °F) *Literature* .
Flash Point - Closed Cup	104 °C (219 °F) *EC Method A9 (CC)* (PMCC)
Flash Point - Open Cup	No test data available
Evaporation Rate (Butyl Acetate = 1)	0.01 *Estimated.*
Flammability (solid, gas)	Not applicable to liquids
Flammable Limits In Air	**Lower**: 2.6 %(V) *Estimated.* **Upper**: 12.5 %(V) *Estimated.*
Vapor Pressure	20 Pa @ 25 °C *EC Method A4*
Vapor Density (air = 1)	2.62 *Literature*
Specific Gravity (H2O = 1)	1.03 20 °C/20 °C *EU Method A.3 (Relative Density)*
Solubility in water (by weight)	100 % @ 20 °C *EU Method A.6 (Water Solubility)*
Partition coefficient, n-octanol/water (log Pow)	-1.07 *Measured*
Autoignition Temperature	100.01 kPa > 400 °C (> 752 °F) *EC Method A15*
Decomposition Temperature	No test data available
Dynamic Viscosity	43.4 mPa.s @ 25 °C *Literature*
Kinematic Viscosity	No test data available
Explosive properties	Not explosive
Oxidizing properties	No
Liquid Density	1.03 g/cm3 @ 20 °C *Literature*
Solubility in Solvents	No test data available
Pour point	< -57 °C (< -71 °F) *Literature*
Henry's Law Constant (H)	1.2E-08 atm*m3/mole Measured

10. Stability and Reactivity

Reactivity
No dangerous reaction known under conditions of normal use.

Chemical stability
Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic.

Possibility of hazardous reactions
Polymerization will not occur.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight or ultraviolet sources.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products
Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Organic acids.

11. Toxicological Information

Acute Toxicity
Ingestion
LD50, rat > 20,000 mg/kg
Dermal
No deaths occurred at this concentration. LD50, rabbit > 2,000 mg/kg
Inhalation
No deaths occurred at this concentration. LC50, 2 h, Aerosol, rabbit 317.042 mg/l

Eye damage/eye irritation
May cause slight temporary eye irritation. Corneal injury is unlikely. Mist may cause eye irritation.

Skin corrosion/irritation
Prolonged contact is essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin.

Sensitization
Skin
Did not cause allergic skin reactions when tested in humans.
Respiratory
No relevant data found.

Repeated Dose Toxicity
In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Chronic Toxicity and Carcinogenicity
Did not cause cancer in laboratory animals.

Developmental Toxicity
Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity
In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Genetic Toxicology
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information

Toxicity

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 h: 40,613 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, Ceriodaphnia Dubia (water flea), static test, 48 h: 18,340 mg/l
Aquatic Plant Toxicity
ErC50, Pseudokirchneriella subcapitata (green algae), Growth rate inhibition, 96 h: 19,000 mg/l
Toxicity to Micro-organisms
EC50, activated sludge test (OECD 209), Respiration inhibition, 3 h: > 1,000 mg/l
Aquatic Invertebrates Chronic Toxicity Value
Ceriodaphnia Dubia (water flea), semi-static test, 7 d, number of offspring, NOEC: 13020 mg/l

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
81 %	28 d	OECD 301F Test	pass
96 %	64 d	OECD 306 Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.28E-11 cm3/s	10 h	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
69.0 %	70.0 %	86.0 %	

Chemical Oxygen Demand: 1.53 mg/mg
Theoretical Oxygen Demand: 1.68 mg/mg

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): -1.07 Measured
Bioconcentration Factor (BCF): 0.09; Estimated.

Mobility in soil

Mobility in soil: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): < 1 Estimated.
Henry's Law Constant (H): 1.2E-08 atm*m3/mole Measured

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices 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. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE

PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Product Name: PROPYLENE GLYCOL
Ship Type: Not available
Pollution Category: Z

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Propylene glycol	57-55-6	>= 99.5 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30
CEPA - Domestic Substances List (DSL)
All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Product Literature
Additional information on this and other products may be obtained by visiting our web page.

Hazard Rating System

NFPA	Health	Fire	Reactivity
	1	1	0

Recommended Uses and Restrictions
Identified uses
Manufacture of substance, industrial. Distribution of substance, industrial. Formulation & (re)packing of substances and mixtures, industrial. Uses in Coatings, industrial. Use in Cleaning Agents, industrial. Use as binders and release agents: Industrial (SU3) Functional Fluids, industrial. Use in laboratories, industrial. Polymer production: Industrial (SU10) Rubber production and processing, industrial. Water treatment chemicals For industrial use. Mining Chemicals For industrial use. Use in laboratories, professional. Use as binders and release agents, professional. Professional use in cleaning agents. Water treatment chemicals professional use Uses in Coatings, professional. Functional Fluids, professional. De-icing and anti-icing applications, professional. Professional use in agrochemicals. Uses in Coatings, consumer. Use in Cleaning Agents, consumer. Functional Fluids, consumer. Other Consumer Uses Consumer use in agrochemicals. De-icing and anti-icing applications, consumer.

Revision
Identification Number: 40808 / 1001 / Issue Date 12/02/2013 / Version: 6.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

The Clorox Company
1221 Broadway
Oakland, CA 94612
Tel. 1-510-271-7000

Material Safety Data Sheet

I Product:	FORMULA 409® ANTIBACTERIAL ALL-PURPOSE CLEANER
Description:	CLEAR, GREEN, THIN LIQUID WITH A FLORAL, CITRUS ODOR

Other Designations	Distributor	Emergency Telephone Nos.
EPA Reg. No. 5813-73	The Clorox Sales Company 1221 Broadway Oakland, CA 94612	For Medical Emergencies, call 1-800-446-1014. For Transportation Emergencies, call 1-800-424-9300 (Chemtrec).

II Health Hazard Data

Causes moderate eye irritation.

No medical conditions are known to be aggravated by exposure to this product.

FIRST AID:

EYE CONTACT: Hold eye open and rinse with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. If irritation persists, call a doctor.

SKIN CONTACT: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation develops, call a doctor.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glassful of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If breathing problems develop, call a doctor.

III Hazardous Ingredients

Ingredient	Concentration	Worker Exposure Limit
Alkyl (40% C12, 50% C14, 10% C16) dimethyl benzyl ammonium chloride CAS # 68424-85-1	0.2 - 0.4%	Not established.
Lauramine oxide CAS # 1643-20-5	0.5 - 1.5%	Not established.

None of the materials in this product are on the IARC, OSHA, or NTP carcinogen lists.

IV Special Protection and Precautions

Hygienic Practices: Wash thoroughly with soap and water after handling.

Engineering Controls: Use general ventilation to minimize exposure to product mist.

Personal Protective Equipment: Wear safety glasses. Wear rubber or neoprene gloves for sensitive skin or if there is the potential for repeated or prolonged skin contact.

Avoid contact with foods.

V Transportation and Regulatory Data

DOT/IATA/IMDG: Not restricted.

EPA - SARA Title III/CERCLA: This product is regulated under Sections 311/312. This product contains no chemicals that are regulated under Section 313 and contains potassium hydroxide (CAS # 1310-58-3, <0.1%) that is regulated under Section 304/CERCLA.

TSCA 8(b): All components of this product are either on the TSCA 8(b) Inventory or otherwise exempt from listing.

TSCA 12(b): This product is not subject to TSCA 12(b) reporting requirements.

VI Spill Procedures/Waste Disposal

Spill Procedures: Absorb and containerize. Wash residual down to sanitary sewer. Contact the sanitary treatment facility in advance to assure ability to process washed-down material.

Waste Disposal: Dispose of in accordance with all applicable federal, state, and local regulations.

VII Reactivity Data

Stable under normal use and storage conditions.

VIII Fire and Explosion Data

Flash Point: >93°C (closed cup).

Fire Extinguishing Agents: Dry chemical, carbon dioxide (CO_2), foam, or water spray.

IX Physical Data

pH..... 9 -11.5

Specific gravity.....~1.0

Solubility in water .....Soluble

DATE PREPARED 8/2012

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

1 Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: GAS LEAK DETECTOR - MED TEMP**
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the preparation** Leak detection fluid

· **1.3 Details of the supplier of the Safety Data Sheet**
· **Manufacturer/Supplier:**
Highside Chemicals, Inc.
11114 Reichold Road
Gulfport, MS 39503 USA
Phone: (228) 896-9220

· **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585

2 Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**
The product is not classified according to GHS regulations.
The product is not classified according to the CLP regulation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable.
· **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008** N/A
· **Hazard pictograms** N/A
· **Signal word** N/A

· **Hazard-determining components of labelling:** None.
· **Hazard statements** N/A
· **Additional information:**
2,5 percent of the mixture consists of component(s) of unknown toxicity
Safety data sheet available on request.
· **Hazard description:**
· **WHMIS-symbols:** Not hazardous under WHMIS.

(Contd. on page 2)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 1)

· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· **HMIS Long Term Health Hazard Substances**	
127087-87-0	Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy, branched

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**		
CAS: 127087-87-0 NLP: 500-315-8	Poly(oxy-1,2-ethanediyl),alpha-(4-nonylphenyl)-omega-hydroxy, branched Xn R21/22; Xi R36/38 R52 Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	<10%
CAS: 68603-42-9 EINECS: 271-657-0	Coconut diethanolamide Xi R36/38 Skin Irrit. 2, H315; Eye Irrit. 2, H319	<10%
CAS: 111-42-2 EINECS: 203-868-0 Index number: 603-071-00-1	2,2'-iminodiethanol Xn R22-48/22; Xi R38-41 STOT RE 2, H373 Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Irrit. 2, H315	<1,0%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **4.1 Description of first aid measures**
· **General information:** No special measures required.
· **After inhalation:**
Supply fresh air.
Seek medical treatment in case of complaints.

(Contd. on page 3)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 2)

· **After skin contact:**
Clean with water and soap.
If skin irritation continues, consult a doctor.
· **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
· **4.2 Most important symptoms and effects, both acute and delayed** Gastric or intestinal disorders
· **Hazards** No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** None.
· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
· **5.3 Advice for firefighters**
· **Protective equipment:** No special measures required.
· **Additional information** No further relevant information available.

6 Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Particular danger of slipping on leaked/spilled product.
Wear protective clothing.
Ensure adequate ventilation
· **6.2 Environmental precautions:** No special measures required.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Clean the affected area carefully; suitable cleaners are:
Warm water
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **7.1 Precautions for safe handling** No special measures required.
· **Information about fire - and explosion protection:** No special measures required.

(Contd. on page 4)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 3)

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Store away from foodstuffs.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from frost.
· **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**
· **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
· **DNELs** No further relevant information available.
· **PNECs** No further relevant information available.
· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
· **Respiratory protection:** Not required under normal conditions of use.
· **Protection of hands:** Rubber gloves
· **Eye protection:**


Safety glasses

· **Body protection:** Not required under normal conditions of use.
· **Limitation and supervision of exposure into the environment** No special requirements.
· **Risk management measures** No special requirements.

9 Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Liquid
Colour:	Pink
· **Odour:**	Mild
· **Odour threshold:**	Not determined.

(Contd. on page 5)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 4)

· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	212 °F / 100 °C
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	Not determined.
· **Decomposition temperature:**	Not determined.
· **Self-igniting:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapour pressure at 20 °C:**	23 hPa
· **Density at 20 °C:**	1 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with water:**	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	Not determined.
Solids content:	Not determined.
· **9.2 Other information**	No further relevant information available.

10 Stability and reactivity

· **10.1 Reactivity**
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **10.3 Possibility of hazardous reactions** Reacts with strong acids and oxidizing agents.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.

(Contd. on page 6)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 5)

· **10.6 Hazardous decomposition products:** Possible in traces.

11 Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Slight irritant effect on eyes.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

12 Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** biodegradable
· **12.3 Bioaccumulative potential** Does not accumulate in organisms
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
This statement was deduced from products with a similar structure or composition.
Due to available data on eliminability/decomposition and bioaccumulation potential a prolonged damage of the environment is unlikely.
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
On the basis of the necessary technical regulations and after consultation with the disposal agent and the relevant authorities, can be disposed of with domestic waste or incinerated with domestic waste.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.

(Contd. on page 7)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 6)

· **Recommended cleansing agents:** Water only.

14 Transport information

· **14.1 UN-Number**	
· **DOT, ADR, ADN, IMDG, IATA**	N/A
· **14.2 UN proper shipping name**	
· **DOT, ADR, ADN, IMDG, IATA**	N/A
· **14.3 Transport hazard class(es)**	
· **DOT, ADR, ADN, IMDG, IATA**	
· **Class**	N/A
· **14.4 Packing group**	
· **DOT, ADR, IMDG, IATA**	N/A
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No
· **14.6 Special precautions for user**	Not applicable.
· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	-

15 Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **United States (USA)**
· **SARA**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**	
111-42-2	2,2'-iminodiethanol

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65 (California):**
· **Chemicals known to cause cancer:**
Present in trace quantities: CAS 81-88-9.

68603-42-9	Coconut diethanolamide
111-42-2	2,2'-iminodiethanol
81-88-9	9-(2-carboxyphenyl)-3,6-bis(diethylamino)xanthylium chloride

(Contd. on page 8)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 7)

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
Present in trace quantities: CAS 872-50-4.

872-50-4	N-methyl-2-pyrrolidone

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

111-42-2	2,2'-iminodiethanol	A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Canada**

· **Canadian Domestic Substances List (DSL)**
All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**
None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 1%)**
None of the ingredients is listed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
R21/22 Harmful in contact with skin and if swallowed.
R22 Harmful if swallowed.
R36/38 Irritating to eyes and skin.
R38 Irritating to skin.

(Contd. on page 9)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 09.04.2013 Revision: 09.04.2013

Trade name: GAS LEAK DETECTOR - MED TEMP

(Contd. of page 8)

R41 Risk of serious damage to eyes.
R48/22 Harmful: danger of serious damage to health by prolonged exposure if swallowed.
R52 Harmful to aquatic organisms.

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)

· **Sources**
SDS Prepared by:
ChemTel Inc.
1305 North Florida Avenue
Tampa, Florida USA 33602-2902
Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573
Website: www.chemtelinc.com

U S Chemical

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

NAME: PAX-SOLV
USE: PERSONAL CARE
LABEL BRAND: U S CALRITE
MSDS # 100916 CODE # 064554

U S CHEMICAL, 316 HART STREET, WATERTOWN WI 53094 USA
MEDICAL EMERGENCY #: 1-866-923-4913 USA
SPILL EMERGENCY #: 1-800-424-9300 USA
PRODUCT INFORMATION #: 1-800-558-9566 (8 A.M. TO 5 P.M. CST MONDAY TO FRIDAY)
INTERNET ADDRESS: WWW.USCHEMICAL.COM
REVIEWED 4-14-10 REVISED 4-14-10 SECTION REVISED: 1

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: CAUTION! MAY BE MILDLY IRRITATING TO EYES.

PRINCIPLE ROUTES OF EXPOSURE: EYES, INGESTION

POTENTIAL ACUTE HEALTH EFFECTS
EYES: MAY BE MILDLY IRRITATING TO EYES.

SKIN: PROLONGED EXPOSURE TO CONCENTRATE MAY CAUSE MILD IRRITATION TO HIGHLY SENSITIVE SKIN.

INHALATION: NONE KNOWN.

INGESTION: MAY CAUSE ABDOMINAL DISCOMFORT, NAUSEA, VOMITING AND DIARRHEA.

MEDICAL CONDITIONS AGGRAVATED: PERSONS WITH PRE-EXISTING SKIN DISORDERS MAY BE MORE SUSCEPTABLE TO IRRITATING EFFECTS.

3. COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	CAS #	% BY WT	LC50/LD50
N.AP.	N.AP.	N.AP.	N.AP.

INGREDIENT STATEMENT:
THIS PRODUCT CONTAINS: WATER, MINERAL SPIRITS, DIPENTENE, PROPYLENE GLYCOL, COCAMIDE DEA, MINERAL OIL, POLYETHYLENE, NONOXYNOL-9, ACRYLATES/STEARETH-20 METHACRYLATE COPOLYMER, ACRYLATES/C10-30 ALKYL ACRYLATE CROSSPOLYMER, TETRASODIUM EDTA

4. FIRST AID MEASURES

EYES: FLUSH IMMEDIATELY WITH PLENTY OF WATER. IF IRRITATION DEVELOPS, GET MEDICAL ATTENTION.
SKIN: FLUSH IMMEDIATELY WITH PLENTY OF WATER. IF IRRITATION DEVELOPS, GET MEDICAL ATTENTION.
INHALATION: N.AP.
INGESTION: IF PATIENT IS CONSCIOUS AND CAN SWALLOW, GIVE A CUPFUL OF WATER OR MILK.
ADMINISTER FIRST AID TREATMENT AS STATED ABOVE, THEN CALL 1-866-923-4913 OR CONTACT PHYSICIAN FOR FURTHER MEDICAL INSTRUCTIONS.

NOTE TO PHYSICIAN: CALL 1-866-923-4913 FOR ASSISTANCE WITH THE MANAGEMENT OF EXPOSURES.

5. FIRE-FIGHTING MEASURES

FLAMMABILITY: NO HAZARD.
FLASH POINT: N.AP.
PRODUCTS OF COMBUSTION: SEE SECTION 10.
SUITABLE EXTINGUISHING MEDIA: FOR FIRES IN AREA, USE APPROPRIATE MEDIA. FOR EXAMPLE: WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE, OR ALCOHOL FOAM.
SPECIFIC HAZARDS: N.AP.
SPECIFIC METHODS: NORMAL FIRE FIGHTING PROCEDURES MAY BE USED.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: SEE SECTION 8.
SPILL RESPONSE: EVACUATE UNPROTECTED PERSONNEL FROM AREA. WEAR PROPER PROTECTIVE EQUIPMENT INCLUDING RUBBER BOOTS. STOP LEAK IF YOU CAN DO SO WITHOUT RISK. DIKE OR DAM LARGE SPILLS. AVOID DIRECT DISCHARGE TO SEWER AND SURFACE WATERS. PUMP TO CONTAINER OR SOAK UP WITH NON-COMBUSTIBLE INERT ABSORBENT MATERIALS. AFTER SPILL COLLECTION, FLUSH AREA WITH WATER AND FOLLOW WITH NORMAL CLEAN-UP PROCEDURES. WASH CONTAMINATED CLOTHING AND FOOTWEAR BEFORE RE-USE. VENTILATE AREA IF NEEDED. BE CAREFUL AS SPILLS ARE SLIPPERY.

7. HANDLING AND STORAGE

HANDLING: FOLLOW ALL LABEL DIRECTIONS. INSTRUCT PERSONNEL ABOUT PROPER USE, HAZARDS, PRECAUTIONS, AND FIRST AID MEASURES. AVOID INGESTION AND CONTACT WITH EYES. DO NOT TASTE OR SWALLOW. HANDLE CAREFULLY TO AVOID DAMAGING CONTAINER.

STORAGE: ROTATE STOCK REGULARLY. KEEP CONTAINER CLOSED WHEN NOT IN USE. AVOID TEMPERATURES BELOW 35°F OR ABOVE 120°F. PROTECT FROM FREEZING. STORAGE AT AMBIENT TEMPERATURES IN A DRY AREA OUT OF DIRECT SUNLIGHT IS RECOMMENDED. KEEP AWAY FROM FOOD AND DRINK. KEEP OUT OF CHILDREN'S REACH.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS: N.AV.

ENGINEERING CONTROLS: N.AP.

PERSONAL PROTECTION
EYES: N.AP.
HANDS: N.AP.
RESPIRATORY: N.AP.
FEET: N.AP.
BODY: N.AP.

9. PHYSICAL AND CHEMICAL PROPERTIES

COLOR: OPAQUE WHITE
ODOR: CITRUS
pH CONCENTRATE: 7.5
pH @ 2500 PPM SOLUTION: N.AP.
pH @ USE DILUTION: N.AP.
PHYSICAL STATE: LIQUID
SPECIFIC GRAVITY: 0.963
VISCOSITY: VISCOUS
BOILING POINT: N.AP.
MELTING POINT: N.AP.
FLASH POINT: N.AP.
UEL: N.AP.
LEL: N.AP.
EVAPORATION RATE: N.AP.
ODOR THRESHOLD: N.AP
VAPOR PRESSURE: N.AP
VAPOR DENSITY: N. AP.
COEFF. OIL/WATER: N.AP.
WATER SOLUBILITY: COMPLETE
OTHER: N.AP.

10. STABILITY AND REACTIVITY

STABLE: YES
CONDITIONS TO AVOID: AVOID TEMPERATURES BELOW 35°F OR ABOVE 120°F.

MATERIALS TO AVOID: AVOID MIXING DIRECTLY WITH ANY OTHER CLEANING PRODUCT. AVOID OXIDIZING AGENTS.

DECOMPOSITION PRODUCTS: FIRE OR MIXING WITH INCOMPATIBLE MATERIALS MAY PRODUCE OXIDES OF SULFUR AND OTHER TOXIC OR IRRITATING FUMES.

POSSIBILITY OF HAZARDOUS REACTIONS: N.AP.

11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS: SEE SECTION 2.
CHRONIC EFFECTS: NONE KNOWN. NO REPORTABLE CARCINOGENS, MUTAGENS, SENSITIZERS, SYNERGISTIC MATERIALS, TERATOGENS, OR REPRODUCTIVE TOXINS.
LC50/LD50: N.AV.
TARGET ORGANS: NONE KNOWN.
OTHER TOXIC EFFECTS: NONE KNOWN.

12. ECOLOGICAL INFORMATION

NOT AVAILABLE.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: COMPLY WITH ALL FEDERAL, STATE, PROVINCIAL AND LOCAL LAWS AND REGULATIONS. CONSULT STATE AND LOCAL AUTHORITIES FOR RESTRICTIONS ON DISPOSAL OF CHEMICAL WASTE. MANAGE CHEMICAL WASTES THROUGH AN APPROVED WASTE TREATMENT FACILITY. DO NOT REUSE EMPTY CONTAINER. RINSE EMPTY CONTAINER THOROUGHLY WITH WATER BEFORE DISCARDING CONTAINER IN ACCORDANCE WITH CURRENT LOCAL COMMUNITY CODES. PLEASE RECYCLE EMPTY CONTAINER WHENEVER POSSIBLE.

14. TRANSPORT INFORMATION

DOT/TDG: NOT REGULATED
DOT RQ: N.AP.
DOT ERG #: N.AP.

15. REGULATORY INFORMATION

EPA CERCLA RQ: N.AP.
EPA REGISTERED: NO
EPA VOC: 0.00%
EPA VOC RULE: THIS PRODUCT DOES NOT CONTAIN VOLATILE ORGANIC COMPOUNDS.
FDA REGULATED: YES (COSMETIC)
OSHA HAZARDOUS: NO
PHOSPHORUS CONTENT: 0.00%
PROPOSITION 65: N.AP.
SARA 311/312 HAZARDS: N.AP.
SARA 313 CHEMICALS: N.AP.
STATE RIGHT TO KNOW: SEE SECTION 3 FOR INGREDIENT STATEMENT.
TSCA INVENTORY STATUS: ALL COMPONENTS ARE LISTED ON THE INVENTORY.
WHMIS CLASS: NOT CONTROLLED.

16. OTHER INFORMATION

NFPA RATING: HEALTH-1/FLAMMABILITY-0/REACTIVITY-0/SPECIAL HAZARD-N.AP.
HMIS RATING: HEALTH-1/FLAMMABILITY-0/REACTIVITY-0/PERSONAL PROTECTION-SEE 8.0

N.AV. = NOT AVAILABLE N.AP. = NOT APPLICABLE PREPARED BY: HEALTH AND SAFETY

NOTICE TO READER

THIS DOCUMENT HAS BEEN PREPARED USING DATA FROM SOURCES CONSIDERED TECHNICALLY RELIABLE. IT DOES NOT CONSTITUTE A WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY OF THE INFORMATION CONTAINED WITHIN. ACTUAL CONDITIONS OF USE AND HANDLING ARE BEYOND SELLER'S CONTROL. USER IS RESPONSIBLE FOR EVALUATING ALL AVAILABLE INFORMATION WHEN USING PRODUCT FOR ANY PARTICULAR USE AND TO COMPLY WITH ALL FEDERAL, STATE, PROVINCIAL AND LOCAL LAWS AND REGULATIONS.

WINDEX® ORIGINAL GLASS CLEANER

Version *1*.1
Print Date 01/19/2013
Revision Date 12/05/2012
MSDS Number 350000014153

1. PRODUCT AND COMPANY IDENTIFICATION

Product information

Trade name	:	WINDEX® ORIGINAL GLASS CLEANER
Use of the Substance/Mixture	:	Hard Surface Cleaner
Company	:	S.C. Johnson & Son, Inc. 1525 Howe Street Racine WI 53403-2236
Emergency telephone number	:	24 Hour Medical Emergency Phone: (866)231-5406 24 Hour International Emergency Phone: (703)527-3887 24 Hour Transport Emergency Phone: (800)424-9300

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance / Odor	:	blue / liquid / pleasant
Immediate Concerns	:	Avoid contact with skin, eyes and clothing.

Potential Health Effects

Exposure routes	:	Eye, Skin, Inhalation, Ingestion.
Eyes	:	May cause: Mild eye irritation
Skin	:	Prolonged or repeated contact may dry skin and cause irritation.
Inhalation	:	No adverse effects expected when used as directed.
Ingestion	:	May cause irritation to mouth, throat and stomach. May cause abdominal discomfort.
Aggravated Medical Condition	:	Persons with pre-existing skin disorders may be more susceptible to irritating effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product does not contain hazardous chemicals at or above a reportable level as defined by OSHA 29 CFR 1910.1200 or Canadian Controlled Products Regulations.

For additional information on product ingredients, see www.whatsinsidescjohnson.com.

WINDEX® ORIGINAL GLASS CLEANER

Version *1*.1 Print Date 01/19/2013

Revision Date 12/05/2012 MSDS Number 350000014153

4. FIRST AID MEASURES

Eye contact	:	Rinse with plenty of water. Get medical attention if irritation develops and persists.
Skin contact	:	Rinse with plenty of water. Get medical attention if irritation develops and persists.
Inhalation	:	No special requirements
Ingestion	:	Rinse mouth with water.

5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Specific hazards during firefighting	:	Container may melt and leak in heat of fire.
Further information	:	Although this product has a flash point below 200 Deg F, it is an aqueous solution containing an alcohol and does not sustain combustion. Fight fire with normal precautions from a reasonable distance. Standard procedure for chemical fires. Wear full protective clothing and positive pressure self-contained breathing apparatus. In case of fire and/or explosion do not breathe fumes.
Flash point	:	85 °C 185 °F Method: ASTM D 56
Lower explosion limit	:	Note: no data available
Upper explosion limit	:	Note: no data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	No special precautions required.
Environmental precautions	:	Outside of normal use, avoid release to the environment.
Methods for cleaning up	:	Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Dike large spills. Clean residue from spill site.

WINDEX® ORIGINAL GLASS CLEANER

Version *1*.1 Print Date 01/19/2013

Revision Date 12/05/2012 MSDS Number 350000014153

7. HANDLING AND STORAGE

Handling

Advice on safe handling	:	Use only as directed. KEEP OUT OF REACH OF CHILDREN AND PETS.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers	:	Keep container closed when not in use. Keep in a dry, cool and well-ventilated place.
Other data	:	Stable under normal conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

ACGIH or OSHA exposure limits have not been established for this product or reportable ingredients unless noted in the table above.

Personal protective equipment

Respiratory protection		No personal respiratory protective equipment normally required.
Hand protection	:	No special requirements.
Eye protection		No special requirements.
Skin and body protection	:	No special requirements.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	liquid
Color	:	blue
Odor	:	pleasant
pH	:	10.7

Boiling point	:	no data available
Freezing point	:	no data available
Flash point	:	85 °C 185 °F Method: ASTM D 56
Evaporation rate	:	no data available
Flammability (solid, gas)	:	Does not sustain combustion.
Auto-ignition temperature	:	no data available
Lower explosion limit	:	no data available
Upper explosion limit	:	no data available
Vapour pressure	:	no data available
Density	:	0.997 g/cm3 at 20 °C
Water solubility	:	soluble
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Volatile Organic Compounds Total VOC (wt. %)*	:	0.5 % - additional exemptions may apply *as defined by US Federal and State Consumer Product Regulations

10. STABILITY AND REACTIVITY

Conditions to avoid	:	Direct sources of heat.
Materials to avoid	:	Strong oxidizing agents
Hazardous decomposition products	:	Thermal decomposition can lead to release of irritating gases and vapours.
Hazardous reactions	:	Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	LD50 estimated

> 5,000 mg/kg

Acute inhalation toxicity : LC50
estimated
> 2.58 mg/l

Acute dermal toxicity : LD50
estimated
> 5,000 mg/kg

Chronic effects
Carcinogenicity : no data available

Mutagenicity : no data available

Reproductive effects : no data available

Teratogenicity : no data available

Sensitisation : Not known to be a sensitizer.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects : no data available

13. DISPOSAL CONSIDERATIONS

Observe all applicable Federal, Provincial and State regulations and Local/Municipal ordinances regarding disposal.
Consumer may discard empty container in trash, or recycle where facilities exist.

14. TRANSPORT INFORMATION

Land transport

- **U.S. DOT and Canadian TDG Surface Transportation:**

Proper shipping name	not regulated
Class:	None.
UN/ID No.:	None.
Packaging group	None.

Sea transport

- *IMDG:*

Proper shipping name	not regulated
Class:	None.
UN/ID No.:	None.
Packaging group	None.

Air transport

- *ICAO/IATA:*

Proper shipping name	not regulated
Class:	None.
UN/ID No.:	None.
Packaging group	None.

15. REGULATORY INFORMATION

Notification status	:	All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
Notification status	:	All ingredients of this product comply with the New Substances Notification requirements under the Canadian Environmental Protection Act (CEPA).
California Prop. 65	:	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
Canada Regulations	:	This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

HMIS Ratings

Health	1
Flammability	2
Reactivity	0

NFPA Ratings

WINDEX® ORIGINAL GLASS CLEANER

Version *1*.1
Print Date 01/19/2013
Revision Date 12/05/2012
MSDS Number 350000014153

Health	1
Fire	2
Reactivity	0
Special	-

Further information
This document has been prepared using data from sources considered to be technically reliable. It does not constitute a warranty, expressed or implied, as to the accuracy of the information contained herein. Actual conditions of use are beyond the seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

Prepared by:	SC Johnson Global Safety Assessment & Regulatory Affairs (GSARA)

100% Acetone

MATERIAL SAFETY AND DATE SHEET

N/D = NO DATA

N\A = NOT APPLICABLE

SECTION 1 – PRODUCT INFORMATION

MANUFACTURER	DELON LABORATORIES (1990) Inc. 75 Hymus blvd. Pointe-Claire, Quebec H9R 1E2
EMERGENCY TELEPHONE NUMBER	(514) 685-9966
PRODUCT	Pure Acetone

SECTION 2 – HAZARDOUS INGREDIENTS

Product Description: Keytone
CAS Number: 67-64-1

Regulatory Classification

WHMIS Information
Class B, Division 2: Flammable Liquids
Class D, Division 2, Subdivision B: Toxic Material

TDG Information (Rail/Road):
PIN Number: UN 1090
Shipping Name: Acetone or Acetone Solution
Packing Group: 11
Primary TDG: Class 3

Canadian Environmental Protection Act (CEPA):
All components af this product are either on the Domestic Substances List (DSL) or exempt.
National Pollutant Release Inventory (NPRI): This product does not contain NPRI reportable substances.

SECTION 3 – PHYSICAL / CHEMICAL PROPERTIES

Boiling Point: 56°C

Specific Gravity: 0.79 @ 20°C

Vapor Pressure: 24 kPa at 20°C

Solubility in water: 100% @ 20°C

Freezing/Melting Point: -97°C

Vapor Density (air =1): 2

% Volatile: 100

Organoleptic: Clear colorless liquid with characteristic odor.

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Flash Point: -17°C

Auto ignition Temperature: 538°C

Flammable Limits in air:

% By Volume:

Lower: 2.6

Upper: 12.8

General Hazards: Flammable liquid; may release vapors that form flammable mixture at or above the flash point.

Special Fire Fighting Procedures: Use water spray to cool fire-exposed surfaces and to protect personnel. Shut off fuel to fire if possible to do so without hazard, If a leak or spill has not ignited use water spray to disperse vapors. Either allow fire to burn out under controlled conditions or extinguish with alcohol type foam or dry chemical. Try to cover liquid spills with foam. Self-contained breathing apparatus (SCBA) is recommended for indoor fires and any significant outdoor fires. For small outdoor fires, which can easily be extinguished with a portable fire extinguisher, use of an SCBA is optional.

Fire Extinguishing Media: Water, ABC all purpose or CO_2 extinguisher.

SECTION 5 – REACTIVITY DATA

Stability: Stable

Polymerization: will not occur

Materials to Avoid: Caustics, amines, alkanolamines, aldehydes, ammonia, strong oxidizing agents, and chlorinated compounds.

Hazardous Decomposition Products: None

SECTION 6 – HEALTH HAZARD INFORMATION

Nature of hazard:

Inhalation: Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

Eye Contact: Irritating and will injure the eye tissue if not removed promptly.

Skin Contact: Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis). Low toxicity.

Ingestion: Minimal toxicity. Small amounts of this liquid drawn into the lungs from swallowing or vomiting may cause severe health effects (ex bronchopneumonia or pulmonary edema)

First aid Procedures:

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

Skin: Immediately flush with large amounts of water. Use soap if available. Remove contaminated clothing, including shoes, after flushing has begun if irritation persists, seek medical attention.

Ingestion: If swallowed, DO NOT Induce vomiting. Keep at rest. Get prompt medical attention.

SECTION 7 – SPILL, LEAK AND DISPOSAL PROCEDURES

Spills: Eliminate source of ignition. Contain spill with sand or earth. Do not use combustible materials such as sawdust.

Waste Disposal Method: Consult an expert on the disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately. Take all additional action is necessary to prevent and remedy the adverse effects of the spill.

SECTION 8 – HAZARD CLASSIFICATION

Code of Federal Regulations (CFR):

National Fire Protection Association (NFPA):

Other:

Date Revised: OCT 29, 2010

Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Personal protective equipment
	**Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).**	

Section 1. Product and Company Identification

Product name / Trade name	Paint Thinner	**Associated Product's Item Code**	13-321
Synonym	solvent naphtha (petroleum), medium aliphatic ; straight run kerosene [a complex combination of hydrocarbons obtained from the distillation of crude oil or natural gasoline. it consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of c9 through c12 and boiling in the range of approximately 140deg. c to 220deg. c (284deg. f to 428deg. f).]	**CAS #**	64742-88-7
Chemical family	Solvent.	**Validation date**	Apr. 25 2013
Chemical formula	Not available.	**Print date**	May 01 2013
Manufacturer/Supplier	Recochem Inc. 850 Montee de Liesse Montreal, Quebec H4T 1P4 (514) 341-3550 www.recochem.com	**In case of emergency**	Recochem Inc. Communications and Regulatory Affairs Department (905) 878-5544
Material uses	Consumer products: Various.		

Section 2. Hazards identification

Emergency Overview

WARNING!

COMBUSTIBLE LIQUID AND VAPOR.

Keep away from heat, sparks and flame. Avoid breathing vapor or mist. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use.

Potential Acute Health Effects

See section 11 for more detailed information on health effects and symptoms.

This product may cause mild irritatation to eyes and skin upon contact.
Prolonged and repeated contact with skin can cause drying of the skin resulting in irritation and dermatitis.
Inflammation of the eye is characterized by mild redness, watering, and itching.
Skin inflammation is characterized by mild itching, scaling, reddening.
Ingestion can cause burning sensation, vomiting, drowsiness and in severe cases pulmonary edema.
Inhalation of excessive amounts may result in impairment, such as drowsiness, lack of coordination, headache and nausea.

Note to Physician

Aspiration hazard if swallowed. Can enter lungs and cause damage. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause mild to severe pulmonary injury and possible death.

Continued on next page

Section 3. Composition, information on ingredients

Canada

Name	CAS number	Conc. (% w/w)
Solvent naphtha (petroleum), medium aliph.	64742-88-7	100

There are no other ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First aid measures

Eye contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 30 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 30 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Notes to physician	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 5. Fire-fighting measures

Products of combustion	No specific data.
Fire-fighting media and instructions	Use dry chemical, CO_2, water spray (fog) or foam.
Fire Hazards	Container explosion may occur under fire conditions or when heated. Vapor may travel a considerable distance to source of ignition and flash back. Vigorously supports combustion. Combustible when exposed to heat or flame.
Explosion Hazards	Vapor may travel a considerable distance to source of ignition and flash back.

Section 6. Accidental release measures

Small spill and leak	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Continued on next page

Large spill and leak	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and Storage

Handling	Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage	Do not store above the following temperature: 42°C (107.6°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Engineering controls	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Personal protection	
Eyes	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: splash goggles
Body	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Hands	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this i necessary. >8 hours (breakthrough time): nitrile rubber

United States

Continued on next page

Product name	**Exposure limits**
Solvent naphtha (petroleum), medium aliph.	**OSHA (United States, 2003).** TWA: 500 ppm 8 hour(s). TWA: 2900 mg/m³ 8 hour(s).

Canada

Occupational exposure limits

No exposure limit value known.

Section 9. Physical and chemical properties

Physical State and Appearance	Liquid.	**Odour**	Petroleum distillates [Slight]
Molecular weight	Not available.	**Taste**	Not available.
pH	Not available.	**Colour**	Colorless.
Boiling/condensation point	158 to 195°C (316.4 to 383°F)	**Volatility**	100% (v/v), 100% (w/w)
Melting/freezing point	-58°C (-72.4°F)	**Evaporation rate**	0.1 (Butyl acetate. = 1)
Relative density	0.79	**Odour Threshold**	Not available.
Vapor pressure	0.29 kPa (2.2 mm Hg)	**Viscosity**	Kinematic: 0.0114 cm^2/s (1.14 cSt)
Vapour Density	5 [Air = 1]	**Solubility**	Easily soluble in the following materials: diethyl ether, n-octanol. Insoluble in the following materials: water.
VOC content	100 % (w/w) [ISO 11890-1]	**Other Properties**	Not available.

The product is:	Combustible.
Auto-ignition temperature	229°C (444.2°F)
Flash point	Closed cup: 42°C (107.6°F) [Tagliabue. (ASTM D56)]
Flammable limits	Lower: 1% Upper: 13.3%
Fire hazards in the presence of various substances	Flammable in the presence of open flames, sparks and static discharge

Continued on next page

Section 10. Stability and reactivity

Stability	The product is stable.
Conditions of instability	Not available.
Incompatibility with various substances	Reactive with oxidizing agents.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Canada

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Solvent naphtha (petroleum), medium aliph.	LD50 Oral	Rat	>5000 mg/kg	-

Conclusion/Summary Not available.

Chronic toxicity

Conclusion/Summary Not available.

Carcinogenicity

Conclusion/Summary Not available.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive Toxicity

Conclusion/Summary : Not available.

Section 12. Ecological information

For accidental discharges into the environment, see Section 6:"Accidental Release Measures" for suggested instructions.

Ecotoxicity : No known significant effects or critical hazards.

Canada

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Continued on next page

Section 13. Disposal considerations

Waste information The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Canada TDG Classification

Class	Class 3: Flammable liquid.
Subsidiary class	-
Proper Shipping Name (Canada) TDG	PETROLEUM DISTILLATES, N.O.S.
UN number	UN 1268
Packing Group	III
Special provisions	In containers of 450L or less this product is not classified as a Dangerous Goods according to TDG exemption 1.33

IMDG Classification

Class	Class 3: Flammable liquid.
Subsidiary class	-
Proper Shipping Name IMDG	PETROLEUM DISTILLATES, N.O.S.
UN number	UN 1268
Packing Group	III
Marine pollutant	Not a pollutant.
Special provisions	**Emergency schedules (EmS)** 3-07 **Remarks** In containers of 5 L (5Kg) capacity or less this product is classified as a "Consumer Commodity" under IMDG regulations.

No placard (handling and hazard label) required.

United States DOT (Classification)

Class	Class 3: Flammable liquid.
Subsidiary class	-
Proper Shipping Name (United States) DOT	PETROLEUM DISTILLATES, N.O.S.
UN number	UN 1268

Continued on next page

Packing Group	III
Special provisions	In containers of 450L of less, this product meets the requirements of DOT exemption as per 49 CFR, section 173.150 (f). In containers of 450 L capacity or less this product is exempt from DOT regulations (non regulated).
International Air Transport Association (IATA)	For air shipment classification and associated regulations, please refer to the latest edition of IATA Dangerous Goods Regulations.

Section 15. Regulatory information

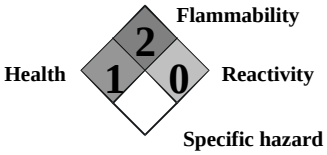
WHMIS Classification (Canada)	Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Canada Domestic Substances List (DSL) Status	This product and/ or all of its components are on the DSL.

HCS Classification (U.S.A.)	Combustible liquid
U.S.A. Regulatory Lists	This product and/ or all of its components are on the TSCA inventory list.

Hazardous Material Information System (U.S.A.)

Health	1
Flammability	2
Reactivity	0
Personal protection	G

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



Section 16. Other information

Validated and verified by Compliance and Technical Information Manager on Apr. 25 2013 **ph.# 905-878-5544.**

Printed May 01 2013

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MSDS are available at www.recochem.com

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name:	Industrial Choice Aerosol - Solvent Based Fluorescent Inverted Marking	Revision Date:	12/01/2006
Identification Number:	203023, 1661838, 1662838, 1669838, 203027, 203028		
Product Use/Class:	Solvent Based Fluorescent Marking Paint/Aerosol		
Supplier:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	Manufacturer:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
Preparer:	Regulatory Department		

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Liquefied Petroleum Gas	68476-86-8	30.0	1000 PPM	N.E.	1000 PPM	N.E.
Aliphatic Hydrocarbon	64742-89-8	20.0	300 PPM	N.E.	300 PPM	N.E.
Aliphatic Petroleum Distillates	64742-48-9	20.0	400 PPM	N.E.	400 PPM	N.E.
Toluene	108-88-3	15.0	50 PPM	150 PPM	200 PPM	300 PPM
Magnesium Silicate	14807-96-6	10.0	10 mg/m3	N.E.	15 mg/m3	N.E.
Polymer Anchored Violet Dye Dispersion	MIXTURE	10.0	N.E.	N.E.	N.E.	N.E.
Polymer Anchored Green Dye Dispersion	MIXTURE	10.0	N.E.	N.E.	N.E.	N.E.
Hydrotreated Light Distillate	64742-47-8	5.0	N.E.	N.E.	N.E.	N.E.
Naphtha	8032-32-4	5.0	300 PPM	N.E.	N.E.	N.E.
Xylene	1330-20-7	5.0	100 PPM	150 PPM	100 PPM	N.E.
Stoddard Solvents	8052-41-3	5.0	100 PPM	N.E.	500 PPM	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Extremely flammable liquid and vapor. Harmful if swallowed.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: May cause central nervous system disorder (e,g.,narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Hold eyelids apart and flush with plenty of water for at least 15 minutes. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F
(Setaflash)

LOWER EXPLOSIVE LIMIT: 0.9 %
UPPER EXPLOSIVE LIMIT : 32.5 %

Extinguishing Media: Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Perforation of the pressurized container may cause bursting of the can. Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

Section 7 - Handling And Storage

Handling: Wash hands before eating. Use only in a well-ventilated area. Wash thoroughly after handling. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Storage: Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Contents under pressure. Do not expose to heat or store above 120 ° F.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Boiling Range:	-34 - 468 F	Vapor Density:	Heavier than air
Odor:	Solvent Like	Odor Threshold:	ND
Appearance:	Liquid	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Slight		
Freeze Point:	ND	Specific Gravity:	
Vapor Pressure:		PH:	NE
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Product LD50: ND

Product LC50: ND

Chemical Name	LD50	LC50
Liquefied Petroleum Gas	N.D.	N.D.
Aliphatic Hydrocarbon	N.D.	N.D.
Aliphatic Petroleum Distillates	N.D.	N.D.
Toluene	N.D.	N.D.
Magnesium Silicate	N.D.	TCLo:11mg/m3 inh.
Polymer Anchored Violet Dye Dispersion	N.D.	N.D.
Polymer Anchored Green Dye Dispersion	N.D.	N.D.
Hydrotreated Light Distillate	N.D.	N.D.
Naphtha	>5000 mg/kg (ORAL, RAT)	N.D.
Xylene	N.D.	N.D.
Stoddard Solvents	N.D.	N.D.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

DOT Proper Shipping Name:	Aerosol	Packing Group:	---
DOT Technical Name:	---	Hazard Subclass:	---
DOT Hazard Class:	2.1	Resp. Guide Page:	126
DOT UN/NA Number:	UN1950		

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Toluene	108-88-3
Xylene	1330-20-7

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None known

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Calcium Carbonate	1317-65-3
Water	7732-18-5

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Calcium Carbonate	1317-65-3
Water	7732-18-5
Barium Sulfate	7727-43-7
Polymer Anchored Red Dye Dispersion	MIXTURE
Polymer Anchored Pink Dye Dispersion	MIXTURE
Polymer Anchored Orange Dye Dispersion	MIXTURE
Polymer Anchored Orange Dye Dispersion	MIXTURE
Modified Alkyd	PROPRIETARY
Modified Alkyd	PROPRIETARY

California Proposition 65:

These products contain no known chemicals known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5, D2A, D2B

Section 16 - Other Information

HMIS Ratings:

Health: 2 Flammability: 4 Reactivity: 0 Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, g/l: NA

REASON FOR REVISION:

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

SAFETY DATA SHEET

CITGO No. 2 Diesel Fuel, Low Sulfur, All Grades

Section 1. Identification

GHS product identifier : CITGO No. 2 Diesel Fuel, Low Sulfur, All Grades

Chemical name : Fuels, diesel, No 2

Synonyms : No. 2-D Grade Diesel Fuel Oil (defined by ASTM D-975); Treated or Refined Diesel Fuel No. 2; Grade 2 Distillate Fuel; Hydrodesulfurized Middle Distillate; C9-C16 Petroleum Hydrocarbons

Code : Various

MSDS # : AG2DF

Supplier's details : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number : Technical Contact: (832) 486-4000
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY: INHALATION - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [central nervous system (CNS)] - Category 2
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Flammable liquid and vapor.
Harmful if inhaled.
Causes skin and eye irritation.
Suspected of causing cancer.
May be fatal if swallowed and enters airways.
May cause damage to organs through prolonged or repeated exposure. (central nervous system (CNS))

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Fuels, diesel, No 2

Other means of identification : No. 2-D Grade Diesel Fuel Oil (defined by ASTM D-975); Treated or Refined Diesel Fuel No. 2; Grade 2 Distillate Fuel; Hydrodesulfurized Middle Distillate; C9-C16 Petroleum Hydrocarbons

CAS number/other identifiers

CAS number : 68476-34-6

Ingredient name	%	CAS number
Ethyltoluene	<3	25550-14-5
Trimethylbenzene, all isomers	<2	25551-13-7
Naphthalene	<2	91-20-3
Biphenyl	<2	92-52-4
Cumene	<1	98-82-8
Xylenes, mixed isomers	<1	1330-20-7
Ethylbenzene	<1	100-41-4

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

Eye contact : Causes eye irritation.

Inhalation : Harmful if inhaled. Long-term exposure to diesel engine exhaust may cause cancer.

Skin contact : Causes skin irritation.

Ingestion : May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

Specific treatments : Treat symptomatically and supportively.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Specific hazards arising from the chemical : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable extinguishing media : Use dry chemical, carbon dioxide (CO_2,) water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
Diesel engine exhaust

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone

Section 7. Handling and storage

may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities.
Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle.

Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e., loading this material in tanks or shipping compartments that previously contained a dissimilar product).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Trimethylbenzene, all isomers	**ACGIH TLV (United States, 4/2014).** TWA: 25 ppm 8 hours. TWA: 123 mg/m³ 8 hours.
Naphthalene	**ACGIH (United States). Absorbed through skin.** TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes. **OSHA (United States).** TWA: 10 ppm 8 hours. **ACGIH TLV (United States, 4/2014). Absorbed through skin.** TWA: 10 ppm 8 hours. TWA: 52 mg/m³ 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 10 ppm 8 hours. TWA: 50 mg/m³ 8 hours.
Biphenyl	**OSHA PEL Z2 (United States).** TWA: 0.2 ppm 8 hours. **ACGIH TLV (United States, 4/2014).** TWA: 0.2 ppm 8 hours. TWA: 1.3 mg/m³ 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 0.2 ppm 8 hours. TWA: 1 mg/m³ 8 hours.
Cumene	**ACGIH TLV (United States, 4/2014).** TWA: 50 ppm 8 hours. **OSHA PEL (United States, 2/2013). Absorbed through**

Section 8. Exposure controls/personal protection

	skin. TWA: 50 ppm 8 hours. TWA: 245 mg/m³ 8 hours.
Xylenes, mixed isomers	**ACGIH TLV (United States, 4/2014).** TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m³ 15 minutes. **OSHA PEL (United States, 2/2013).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.
Ethylbenzene	**ACGIH TLV (United States, 4/2014).** TWA: 20 ppm 8 hours. **OSHA PEL (United States, 2/2013).** TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. chemical splash goggles. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Physical state	:	Liquid.
Color	:	Colorless to light yellow or red.
Odor	:	Characteristic.
pH	:	Not available.
Melting point	:	-30 to -18°C (-22 to -0.4°F)
Boiling point/boiling range	:	282 to 338°C (539.6 to 640.4°F)
Flash point	:	Closed cup: 52°C (125.6°F) [Pensky-Martens.]
Evaporation rate	:	<1 (butyl acetate = 1)
Lower and upper explosive (flammable) limits	:	Lower: 0.6% Upper: 6.5%
Vapor pressure	:	0.27 kPa (2 mm Hg) [room temperature]
Vapor density	:	5 [Air = 1]
Relative density	:	0.84
Density lbs/gal	:	Estimated 7 lbs/gal
Gravity, °API	:	Estimated 37 @ 60 F
Solubility	:	Very slightly soluble in the following materials: cold water.
Solubility in water	:	0.005 g/l
Partition coefficient: n-octanol/water	:	>3.3
Auto-ignition temperature	:	254 to 285°C (489.2 to 545°F)
Viscosity	:	Kinematic (room temperature): 0.03 cm^2/s (3 cSt)

Section 10. Stability and reactivity

Reactivity	:	Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatible materials	:	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Trimethylbenzene, all isomers	LD50 Oral	Rat	8970 mg/kg	-
Naphthalene	LD50 Oral	Rat	490 mg/kg	-
Biphenyl	LD50 Dermal	Rabbit	>5010 mg/kg	-
	LD50 Oral	Rat	2140 mg/kg	-
Cumene	LC50 Inhalation Vapor	Mouse	10 g/m³	7 hours
	LD50 Dermal	Rabbit	12300 uL/kg	-
	LD50 Oral	Rat	2.9 g/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
Xylenes, mixed isomers	LC50 Inhalation Gas.	Cat	9500 ppm	2 hours
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
	LC50 Inhalation Gas.	Rat	6700 ppm	4 hours
	LC50 Inhalation Gas.	Rat	6670 ppm	4 hours
	LD50 Oral	Mouse	2119 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
Ethylbenzene	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

Conclusion/Summary : No additional information.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Trimethylbenzene, all isomers	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Naphthalene	Skin - Mild irritant	Rabbit	-	495 milligrams	-
Biphenyl	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 500 microliters	-
Cumene	Eyes - Mild irritant	Rabbit	-	86 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
Xylenes, mixed isomers	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Moderate irritant	Rabbit	-	100 Percent	-
Ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-

Skin : No additional information.

Eyes : No additional information.

Respiratory : No additional information.

Sensitization

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary :

Section 11. Toxicological information

Diesel exhaust particulate: Lung tumor and lymphomas were identified in rats and mice exposed to unflitered diesel fuel exhaust in chronic inhalation studies. Further, epidemiological studies have identified increase incidences of lung cancer in US railroad workers and bladder cancer in bus and truck drivers possibly associated with exposure to diesel engine exhaust. NTP has determined that exposure to diesel exhaust particulates, a complex mixture of combustion products of diesel fuel, is reasonably anticipated to be a human carcinogen. In addition, NIOSH has identified complete diesel exhaust as a potential carcinogen.

Classification

Product/ingredient name	OSHA	IARC	NTP
Fuels, diesel, No 2	-	3	-
Diesel exhaust particulate	-	1	Reasonably anticipated to be a human carcinogen.
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.
Xylenes, mixed isomers	-	3	-
Ethylbenzene	-	2B	-

Reproductive toxicity

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Trimethylbenzene, all isomers	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Biphenyl	Category 3	Not applicable.	Respiratory tract irritation
Cumene	Category 3	Not applicable.	Respiratory tract irritation
Ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Fuels, diesel, No 2	Category 2	Not determined	central nervous system (CNS)
Trimethylbenzene, all isomers	Category 2	Not determined	central nervous system (CNS)
Xylenes, mixed isomers	Category 2	Not determined	ears

Aspiration hazard

Name	Result
Trimethylbenzene, all isomers	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
propylbenzene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes eye irritation.

Inhalation : Harmful if inhaled. Long-term exposure to diesel engine exhaust may cause cancer.

Skin contact : Causes skin irritation.

Section 11. Toxicological information

Ingestion : May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : Adverse symptoms may include the following:
nausea or vomiting

Potential chronic health effects

General : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Trimethylbenzene, all isomers	Acute LC50 5600 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
Naphthalene	Acute EC50 1600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Chronic NOEC 0.67 ppm Fresh water	Fish - Oncorhynchus kisutch	40 days
Biphenyl	Acute LC50 360 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1450 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 0.17 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.229 mg/l Fresh water	Fish - Oncorhynchus mykiss	87 days
Cumene	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 7400 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 10600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Xylenes, mixed isomers	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus -	96 hours

Section 12. Ecological information

		Juvenile (Fledgling, Hatchling, Weanling)	
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
Ethylbenzene	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 5200 µg/l Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Not available.

Conclusion/Summary : Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Fuels, diesel, No 2	>3.3	-	low
Trimethylbenzene, all isomers	3.4 to 3.8	-	low
Naphthalene	3.4	36.5 to 168	low
Biphenyl	4.008	1900	high
Cumene	3.55	94.69	low
Xylenes, mixed isomers	3.12	8.1 to 25.9	low
Ethylbenzene	3.6	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D001, D018

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	NA1993	UN 1202	UN 1202
UN proper shipping name	NA 1993, Diesel Fuel, 3, PG III	UN 1202, Diesel Fuel, 3, PG III	UN 1202, Diesel Fuel, 3, PG III
Transport hazard class(es)	3 	3 	3 
Packing group	III	III	III
Environmental hazards	No.	Yes.	No.
Additional information	**Packaging instruction** **Passenger aircraft** Quantity limitation: 60 L Packaging instructions: Y309 **Cargo aircraft** Quantity limitation: 220 L Packaging instructions: 310 **Remarks** 49 CFR 173.150 (f)(1) states that a flammable liquid with a flash point at or above 38ºC (100ºF) that does not meet the definition of any other hazard class may be reclassed as a combustible liquid. This provision does not apply to transportation by vessel or aircraft except where other means of transportaion is impracticable.	-	**Cargo Aircraft Only**Quantity limitation: 220 L Packaging instructions: 310 **Limited Quantities - Passenger Aircraft**Quantity limitation: 60 L Packaging instructions: 309Y

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.

Clean Water Act (CWA) 307: Ethylbenzene; Naphthalene; Toluene; Benzene

Clean Water Act (CWA) 311: Ethylbenzene; Xylenes, mixed isomers; Naphthalene; Toluene; Benzene

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

Section 15. Regulatory information

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Fuels, diesel, No 2	Yes.	No.	No.	Yes.	Yes.
Trimethylbenzene, all isomers	Yes.	No.	No.	Yes.	Yes.
Naphthalene	Yes.	No.	No.	Yes.	Yes.
Biphenyl	No.	No.	No.	Yes.	No.
Cumene	Yes.	No.	No.	Yes.	Yes.
Xylenes, mixed isomers	Yes.	No.	No.	Yes.	Yes.
Ethylbenzene	Yes.	No.	No.	Yes.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Naphthalene Ethylbenzene	91-20-3 100-41-4	<1 <1
Supplier notification	Naphthalene Ethylbenzene	91-20-3 100-41-4	<1 <1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: Trimethylbenzene, all isomers; Ethyltoluene

New York : The following components are listed: Ethylbenzene; Cumene; Benzene, 1-methylethyl-; Naphthalene

New Jersey : The following components are listed: Ethylbenzene; Cumene; NAPHTHALENE; TRIMETHYL BENZENE (mixed isomers); BENZENE, TRIMETHYL-; ETHYLTOLUENES; BENZENE, ETHYLMETHYL-

Pennsylvania : The following components are listed: Ethylbenzene; Cumene; NAPHTHALENE; Trimethylbenzene, all isomers; Ethyltoluene

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Naphthalene	<1	Yes.	No.	Yes.	No.
Cumene	<1	Yes.	No.	No.	No.
Ethylbenzene	<1	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Diesel exhaust particulate	<1	Yes.	No.	No.	No.
Toluene	<0.1	No.	Yes.	No.	7000 µg/day (ingestion)
Benzene	<0.1	Yes.	Yes.	6.4 µg/day (ingestion)	24 µg/day (ingestion) 49 µg/day

Section 15. Regulatory information

				13 µg/day (inhalation)	(inhalation)

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Canada inventory : All components are listed or exempted.

EU Inventory : All components are listed or exempted.

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).

Section 16. Other information

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

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 7/29/2015.

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

Section 16. Other information

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL DTE 25
Product Description: Base Oil and Additives
Product Code: 602631-00, 970826
Intended Use: Hydraulic fluid

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300
ExxonMobil Transportation No.	281-834-3296
MSDS Requests	713-613-3661
Product Technical Information	800-662-4525, 800-947-9147
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use

mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides, Aldehydes

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200C (392F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL, 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.876
Flash Point [Method]: >200C (392F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316C (600F)
Vapor Density (Air = 1): > 2 at 101 kPa

Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 C
Evaporation Rate (n-butyl acetate = 1): N/A
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 46 cSt (46 mm2/sec) at 40 C
Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -18°C (0°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

CHRONIC/OTHER EFFECTS

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-

specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT) : Not Regulated for Land Transport

LAND (TDG) : Not Regulated for Land Transport

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: ENCS, AICS, IECSC, KECI, PICCS, TSCA, EINECS, DSL

EPCRA: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
ZINC ALKYL DITHIOPHOSPHATE	68649-42-3	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
No revision information is available.

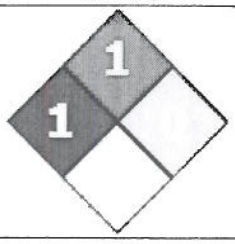
The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only
MHC: 0, 0, 0, 0, 0, 0 PPEC: A

DGN: 2007796XUS (1012764)

Material Safety Data Sheet # 336

Hercules Chemical Company Inc.
111 South Street
Passaic NJ 07055-7398
Information Telephone: 1-800 221-9330
Internet: www.herchem.com

NFPA	HMIS	PPE	Transport Symbol
	Health Hazard 1 Fire Hazard 1 Reactivity 0		

Preparation Date April 27, 2007 **Revision Date 6/20/11** **Revision Number 2**

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identity: HERCULES DARK CUTTING OIL.
Intended Use: PIPE THREADING LUBRICANT

Manufacturer: Hercules Chemical Company, Inc.
111 South Street
Passaic, New Jersey 07055-7398

Information Telephone: (800) 221-9330

Internet: http://www.herchem.com

Emergency Phone: **CHEMTREC: (800) 424-9300**

MSDS Date of Original Preparation: **03/23/2007**

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

If ingested, do not induce vomiting because of the potential of aspiration into lungs.
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which vary from person to person. As a precaution, exposure to liquids, vapors, mist or fumes should be minimized.

Potential Health Effects.
Inhalation: Vapor inhalation of the product under ambient conditions is not a problem. If overcome by vapor from hot product, move the victim to fresh air. If not breathing, administer artificial respiration if trained. Get medical attention.
Ingestion: Low oral and dermal toxicity.
Eye: May cause mild to transient irritation.
Skin: May cause slight skin irritation. Prolonged or repeated skin contact can cause skin irritation and dermatitis.

HMIS Hazard Rating: 1 1 0 B

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Wt/Wt %	OSHA PEL	ACGIH TLV	Other Limits
Petroleum Based Lubricating Oils	64742-52-5, 64742-46-7	85-90	5 mg/m³	5 mg/m³ (as oil mist)	N/A
Sulfurized Fatty Oil Esters	68153-70-8	5-10	N/A	N/A	N/A
1-Decene, Sulfurized	72162-15-3	1-5	N/E	N/E	N/E
Asphalt	8052-42-4	5-10	5 mg/m³ (fumes)	5 mg/m³ (fumes)	N/A

4. EMERGENCY AND FIRST AID PROCEDURES.

Eye: Immediately flush victim's eyes with large quantities of water, for 15 minutes, holding the eyelids apart. Get medical attention if irritation persists.
Skin: Wash with water. Remove contaminated clothing
Ingestion: DO NOT INDUCE VOMITING. Immediately seek medical help.
Inhalation: Not a possible route of exposure under ambient temperature. If overcome by vapor from heated product, remove to fresh air. If not breathing, give artificial respiration if trained. Call a physician.

Note: Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flashpoint: 320°F (160°C) (Test Method COC)
Flammable Limits: Not established.
Autoignition Temperature: Not established
Extinguishing Media: Water fog, Foam, Dry Chemical, Carbon Dioxide
Unusual Fire or Explosion Hazards: Empty containers not properly cleaned retain oil residue and can be dangerous.
Special Fire-Fighting Instructions: Firefighters and others who might be exposed to products of combustion, should wear (NIOSH approved) positive pressure self-contained breathing apparatus and full protective clothing.
Hazardous Combustion Products: Carbon monoxide, oxides of sulfur and other decomposition products may form upon incomplete combustion.

6. ACCIDENTAL RELEASE MEASURES

Spills/Leak Control: Keep spills out of sewers and water ways by dikeing. If the product has entered or may enter sewer, water ways or extensive land areas, advise authorities.
For small spills, absorb with inert material, sweep or scoop into containers for disposal at an approved waste site or facility.
Large spill, contain with by dikeing, pump the material into drums for disposal in accordance with Federal, State and local regulations. Absorb the left over with inert material (vermiculite) and collect into containers for disposal.

7. HANDLING AND STORAGE

Handling: No special precautions are required under normal conditions. Avoid excessive skin contact.
Storage: Store in original containers. Keep containers closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: If oil mist exists, use NIOSH approved mask for oil mists.
Engineering Controls: Use with general or local exhaust ventilation.
Skin Protection: Wear protective gloves where prolonged contact is anticipated.
Eye Protection: Safety glasses or goggles if oil is being sprayed or splashed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance And Odor: Dark with petroleum odor.	**Boiling Point:** >425°F
Physical State: liquid	**Vapor Pressure:** < 0.1 @ 38°C/100°F
Vapor Density: > 8.0	**Evaporation Rate:** (Butyl Acetate=1) < 1.0one
Solubility In Water: Negligible	**Volatile Components:** 59 g/l
Specific Gravity: 0.906 @ 25°C	**Viscosity** @ 40°C: 35-42 cSt.
Melting Point: N/A	**pH:** N/A

10. STABILITY AND REACTIVITY

Stability: Stable.
Conditions to avoid: Open flames, sparks, and ignition sources.
Incompatibility: Strong oxidizers such as liquid chlorine, sodium or calcium hypochlorite, and pure oxygen.
Hazardous Decomposition Products: Carbon monoxide, oxides of sulfur and other decomposition products may form from incomplete combustion.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

HEALTH HAZARDS:
Inhalation: Not a known route of entry under typical conditions. If overcome by vapors from hot product, remove to fresh air. If not breathing, give artificial respiration if trained. Get medical attention.
Eye: May cause moderate to severe irritation.
Skin: May cause moderate skin irritation on prolonged contact. Prolonged skin contact with oils tends to remove skin oils possibly leading to irritation and dermatitis. Based on human experience and available toxicological data, this product is judged to be neither a corrosive nor an irritant by OSHA criteria.
Ingestion: Do not induce vomiting due to potential for aspirations into the lungs.
Sensitization: None.
Chronic: Not established
Carcinogenicity: Not a carcinogen
Mutagenicity: Not mutagenic.
Medical Conditions Aggravated by Exposure: Unknown.
Reproductive Toxicity: None
Acute Toxicity Values: Low levels of oral and dermal toxicity.

12. ECOLOGICAL INFORMATION

Environmental Toxicity: Not established.
Environmental Transport: Unknown.
Environmental Degradation: Not readily biodegradable.
Soil Absorption/Mobility: Unknown

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Federal, State, and Local regulations.

14. TRANSPORT INFORMATION

Not regulated

15. REGULATORY INFORMATION

EPA Regulation:
SARA TITLE III:
This material is not known to contain any chemicals on SARA section 313 list at a concentration greater than 1.0 percent or carcinogenic chemical on that list at a concentration greater than 0.1 percent.

TSCA Inventory: All the components in this product are listed on the TSCA inventory.

16. OTHER INFORMATION

DISCLAIMER:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Hercules cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

Supercedes Date Not applicable **Issuing Date** 10/18/2010

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name PREMALUBE RED AEROSOL
Recommended use Lubricant

Information on Manufacturer
CERTIFIED LABS, DIV. OF NCH CORP.
BOX 152170
IRVING, TEXAS 75015

Product Code 5504
Chemical Nature Petroleum distillates

Emergency Telephone Number 800-424-9300
800-424-9300

2. HAZARDS IDENTIFICATION

Emergency Overview
DANGER
Extremely flammable
May be harmful if inhaled
Causes skin irritation
Causes eye irritation
May be harmful if swallowed
Contents under pressure

Color red **Physical State** Liquid **Odor** Petroleum distillates

Potential Health Effects

Principle Route of Exposure Eye contact, Skin contact, Inhalation.

Primary Routes of Entry Inhalation, Skin Absorption.

Acute Effects

Eyes Causes eye irritation.

Skin Causes skin irritation. May be absorbed through the skin in harmful amounts. Repeated exposure may cause skin dryness or cracking.

Inhalation May cause irritation of respiratory tract. Inhalation may cause central nervous system effects. May cause central nervous system depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Irregular cardiac activity.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic toxicity Repeated and prolonged exposure to solvents may cause brain and nervous system damage, May cause irregular heartbeats, especially under conditions of stress, Liver and kidney injuries may occur, Contains a known or suspected reproductive toxin.

Target Organ Effects Central nervous system, Peripheral Nervous System (PNS), Skin, Eyes, Respiratory system, Liver, Kidney, Heart, Testes.

Aggravated Medical Conditions Neurological disorders, Respiratory disorders, Skin disorders, Liver disorders, Kidney disorders, Heart disease.

Potential Environmental Effects See Section 12 for additional Ecological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No
Butane	106-97-8
Hexane	110-54-3
Cyclohexane	110-82-7
Heptane (n-)	142-82-5
Naphtha, petroleum, hydrotreated light	64742-49-0
Solvent naphtha (petroleum), light aliphatic	64742-89-8
Propane	74-98-6
Methyl acetate	79-20-9
White mineral oil, solvent refined	8042-47-5
Aluminum benzoate fatty acid complex	82980-54-9
Petroleum distillates, hydrotreated heavy naphthenic (<3% DMSO extractable)	64742-52-5

4. FIRST AID MEASURES

General Advice Avoid breathing vapors, mist, or gas. Avoid contact with skin, eyes and clothing.

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.

Skin Contact Wipe up with absorbent material (e.g. cloth, fleece). Wash off with soap and plenty of water. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.

Inhalation If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention if symptoms occur.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point 73°F/23°C **Method** Seta closed cup

Autoignition Temperature No information available.

Flammability Limits in Air % Mixture. **Upper** 16 **Lower** 0.7

Suitable Extinguishing Media
Foam. Carbon dioxide (CO2). Dry chemical. Water spray.

Specific hazards arising from the chemical
Solvent vapors are heavier than air and may spread along floors. Vapors may ignite and explode. Material can create slippery conditions. Flame extension: >30 inches / >76 cm and Burnback: 3 inches / 7.6 cm.

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

Aerosol Level (NFPA 30B) -	3		
NFPA	**Health** 1	**Flammability** 4	**Instability** 0
HMIS	**Health** 1	**Flammability** 4	**Instability** 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.

Environmental Precautions Do not flush into surface water or sanitary sewer system.

Methods for Containment Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Methods for Cleaning Up Pick up and transfer to properly labeled containers.

Neutralizing Agent Not applicable.

7. HANDLING AND STORAGE

Handling Keep away from open flames, hot surfaces and sources of ignition. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing.

Storage Keep away from open flames, hot surfaces and sources of ignition. Keep in a dry, cool and well-ventilated place.

Storage Temperature	**Minimum**	35°F/2°C		**Maximum**	120 °F/49°C		
Storage Conditions	**Indoor**	X	**Outdoor**	**Heated**		**Refrigerated**	

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
Butane	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-C4) : 1000 ppm TWA	No data available	800 ppm TWA; 1900 mg/m^3 TWA
Hexane	Skin : 1000 ppm STEL (other than n-Hexane) : 50 ppm TWA : 500 ppm TWA (other than n-Hexane)	500 ppm TWA; 1800 mg/m^3 TWA	1100 ppm IDLH (10% LEL) : 50 ppm TWA; 180 mg/m^3 TWA : 100 ppm TWA (other than n-Hexane); 350 mg/m^3 TWA (other than n-Hexane) : 510 ppm Ceiling (other than n-hexane, 15 min); 1800 mg/m^3 Ceiling (other than n-hexane, 15 min)
Cyclohexane	100 ppm TWA	300 ppm TWA; 1050 mg/m^3 TWA	1300 ppm IDLH (10% LEL) : 300 ppm TWA; 1050 mg/m^3 TWA
Heptane (n-)	500 ppm STEL (listed under Heptane, all isomers) : 500 ppm STEL : 400 ppm TWA : 400 ppm TWA (listed under Heptane, all isomers)	500 ppm TWA; 2000 mg/m^3 TWA	750 ppm IDLH : 85 ppm TWA; 350 mg/m^3 TWA : 440 ppm Ceiling (15 min); 1800 mg/m^3 Ceiling (15 min)
Naphtha, petroleum, hydrotreated light	No data available	No data available	No data available
Solvent naphtha (petroleum), light aliphatic	No data available	No data available	No data available
Propane	1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-C4) : 1000 ppm TWA	1000 ppm TWA; 1800 mg/m^3 TWA	2100 ppm IDLH (10% LEL) : 1000 ppm TWA; 1800 mg/m^3 TWA
Methyl acetate	250 ppm STEL : 200 ppm TWA	200 ppm TWA; 610 mg/m^3 TWA	3100 ppm IDLH (10% LEL) : 200 ppm TWA; 610 mg/m^3 TWA 250 ppm STEL; 760 mg/m^3 STEL
White mineral oil, solvent refined	5 mg/m^3	5 mg/m^3	IDLH 2500 mg/m^3 STEL 10 mg/m^3
Aluminum benzoate fatty acid complex	No data available	No data available	No data available
Petroleum distillates, hydrotreated heavy naphthenic (<3% DMSO extractable)	TWA: 5 mg/m^3; STEL: 10 mg/m^3	TWA: 5 mg/m^3	IDLH: 2,500 mg/m^3; STEL 10 mg/m^3; TWA: 5 mg/m^3

Engineering Measures Use with local exhaust ventilation. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection Safety glasses with side-shields.

Skin Protection Wear suitable protective clothing, Impervious gloves.

Respiratory Protection In case of inadequate ventilation wear respiratory protection. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General Hygiene Considerations Ensure that eyewash stations and safety showers are close to the workstation location. Remove and wash contaminated clothing before re-use. When using, do not eat, drink, or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid	**Viscosity**	Viscous
Color	red	**Odor**	Petroleum distillates
Appearance	Opaque	**pH**	Not applicable
Specific Gravity	0.746	**Evaporation Rate**	41 (Butyl acetate=1)
Percent Volatile (Volume)	65.9	**VOC Content (%)**	49.1
VOC Content (g/L)	366	**Vapor Pressure**	2088 mmHg @ 70°F
Vapor Density	1.7 (Air = 1.0)	**Solubility**	Negligible
Boiling Point/Range	154°F/68°C		

10. STABILITY AND REACTIVITY

Chemical Stability Stable. Hazardous polymerization does not occur.

Conditions to Avoid Keep away from open flames, hot surfaces, and sources of ignition

Incompatible Products Strong oxidizing agents, Reducing agents, Acids, Bases.

Hazardous Decomposition Products Carbon oxides, Nitrogen oxides (NOx), Sulfur oxides, Aldehydes, Ammonia, Amines, Organic acids, Hydrocarbons, Smoke.

Possibility of Hazardous Reactions None under normal processing.

11. TOXICOLOGICAL INFORMATION

Product Information No information available.

Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
Butane	no data available	no data available	= 658 mg/L (Rat) 4 h	no data available	no data available
Hexane	= 25 g/kg (Rat)	= 3000 mg/kg (Rabbit)	= 48000 ppm (Rat) 4 h	no data available	no data available
Cyclohexane	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 13.9 mg/L (Rat) 4 h	no data available	no data available
Heptane (n-)	no data available	= 3000 mg/kg (Rabbit)	= 103 g/m^3 (Rat) 4 h	no data available	no data available
Naphtha, petroleum, hydrotreated light	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 73680 ppm (Rat) 4 h	no data available	no data available
Solvent naphtha (petroleum), light aliphatic	no data available	= 3000 mg/kg (Rabbit)	no data available	no data available	no data available
Propane	no data available	no data available	= 658 mg/L (Rat) 4 h	no data available	no data available
Methyl acetate	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rat) > 5000 mg/kg (Rabbit)	= 16000 ppm (Rat) 4 h	no data available	no data available
White mineral oil, solvent refined	> 5000 mg/kg (Rat)	no data available	no data available	no data available	no data available
Aluminum benzoate fatty acid complex	no data available	no data available	no data available	no data available	no data available
Petroleum distillates, hydrotreated heavy naphthenic (<3% DMSO extractable)	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 2.18 mg/L (Rat) 4 h	no data available	no data available

Chronic toxicity

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
Butane	no data available	no data available	no data available	no data available	CNS
Hexane	no data available	no data available	no data available	X	eyes, CNS, respiratory system, skin, PNS eyes, CNS, respiratory system, skin (other than n-hexane)
Cyclohexane	no data available	no data available	no data available	no data available	eyes, CNS, respiratory system, skin
Heptane (n-)	no data available	no data available	no data available	no data available	skin, CNS, respiratory system
Naphtha, petroleum, hydrotreated light	no data available	no data available	no data available	no data available	no data available
Solvent naphtha (petroleum), light aliphatic	no data available	no data available	no data available	no data available	no data available
Propane	no data available	no data available	no data available	no data available	CNS
Methyl acetate	no data available	no data available	no data available	no data available	eyes, CNS, liver, kidney, respiratory system, skin
White mineral oil, solvent refined	no data available	no data available	no data available	no data available	respiratory system
Aluminum benzoate fatty acid complex	no data available	no data available	no data available	no data available	no data available
Petroleum distillates, hydrotreated heavy naphthenic (<3% DMSO extractable)	no data available	no data available	no data available	no data available	respiratory system

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

Component	ACGIH	IARC	NTP	OSHA	Other
Butane	not applicable	not applicable	not applicable	not applicable	not applicable
Hexane	not applicable	not applicable	not applicable	not applicable	not applicable
Cyclohexane	not applicable	not applicable	not applicable	not applicable	not applicable
Heptane (n-)	not applicable	not applicable	not applicable	not applicable	not applicable
Naphtha, petroleum, hydrotreated light	not applicable	not applicable	not applicable	not applicable	not applicable
Solvent naphtha (petroleum), light aliphatic	not applicable	not applicable	not applicable	not applicable	not applicable
Propane	not applicable	not applicable	not applicable	not applicable	not applicable
Methyl acetate	not applicable	not applicable	not applicable	not applicable	not applicable
White mineral oil, solvent refined	not applicable	not applicable	not applicable	not applicable	not applicable
Aluminum benzoate fatty acid complex	not applicable	not applicable	not applicable	not applicable	not applicable
Petroleum distillates, hydrotreated heavy naphthenic (<3% DMSO extractable)	not applicable	not applicable	not applicable	not applicable	not applicable

12. ECOLOGICAL INFORMATION

Product Information

No information available.

Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Water Flea	log Pow
Butane	no data available	no data available	no data available	no data available	2.89
Hexane	no data available	2.1-2.98 mg/L Pimephales promelas 96 h	no data available	> 1000 mg/L 24 h	N/A
Cyclohexane	> 500 mg/L Desmodesmus subspicatus 72 h	23.03-42.07 mg/L Pimephales promelas 96 h 3.96-5.18 mg/L Pimephales promelas 96 h 48.87-68.76 mg/L Poecilia reticulata 96 h 24.99-44.69 mg/L Lepomis macrochirus 96 h	EC50 = 85.5 mg/L 5 min EC50 = 93 mg/L 10 min	> 400 mg/L 24 h	3.44
Heptane (n-)	no data available	= 375.0 mg/L Cichlid fish 96 h	no data available	> 10 mg/L 24 h	4.66
Naphtha, petroleum, hydrotreated light	no data available	no data available	no data available	= 2.6 mg/L 96 h	N/A
Solvent naphtha (petroleum), light aliphatic	= 4700 mg/L Pseudokirchneriella subcapitata 72 h	no data available	no data available	no data available	N/A
Propane	no data available	no data available	no data available	no data available	2.8
Methyl acetate	> 120 mg/L Desmodesmus subspicatus 72 h	250-350 mg/L Brachydanio rerio 96 h 295-348 mg/L Pimephales promelas 96 h	EC50 = 6000 mg/L 16 h EC50 = 6100 mg/L 30 min	= 1026.7 mg/L 48 h	0.18
White mineral oil, solvent refined	no data available	> 10000 mg/L Lepomis macrochirus 96 h	no data available	no data available	6
Aluminum benzoate fatty acid complex	no data available	no data available	no data available	no data available	N/A
Petroleum distillates, hydrotreated heavy naphthenic (<3% DMSO extractable)	no data available	> 5000 mg/L Oncorhynchus mykiss 96 h	no data available	> 1000 mg/L 48 h	N/A

Persistence and Degradability No information available.

Bioaccumulation No information available.

Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal Dispose of in accordance with local regulations.

Container Disposal Contents under pressure. Do not puncture. Empty remaining contents. Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name Consumer commodity
Hazard Class ORM-D
Description Consumer commodity,ORM-D

TDG

Proper shipping name Aerosols
Hazard Class 2.1
UN-No UN1950
Description AEROSOLS,2.1,UN1950,LTD QTY

ICAO

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2.1
Shipping Description Aerosols,UN1950,LTD QTY

IATA

UN-No UN1950
Proper Shipping Name Aerosols, flammable
Hazard Class 2.1
ERG Code 10L
Shipping Description UN1950,Aerosols, flammable,2.1, LTD QTY

IMDG/IMO

Proper Shipping Name Aerosols
Hazard Class 2
UN-No UN1950
EmS No. F-D, S-U
Shipping Description UN1950, Aerosols,2,LTD QTY

15. REGULATORY INFORMATION

Inventories

TSCA Complies
DSL Complies

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40n of the Code of Federal Regulations, Part 372

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Hexane	110-54-3	5-10	1.0 % de minimis concentration
Cyclohexane	110-82-7	1-5	1.0 % de minimis concentration

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release of Pressure Hazard	Reactive Hazard
Yes	Yes	Yes	Yes	No

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Butane	Not applicable	Not applicable
Hexane	Not applicable	Not applicable
Cyclohexane	Not applicable	Not applicable
Heptane (n-)	Not applicable	Not applicable
Naphtha, petroleum, hydrotreated light	Not applicable	Not applicable
Solvent naphtha (petroleum), light aliphatic	Not applicable	Not applicable
Propane	Not applicable	Not applicable
Methyl acetate	Not applicable	Not applicable
White mineral oil, solvent refined	Not applicable	Not applicable
Aluminum benzoate fatty acid complex	Not applicable	Not applicable
Petroleum distillates, hydrotreated heavy naphthenic (<3% DMSO extractable)	Not applicable	Not applicable

Canada

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

CPR.

WHMIS Hazard Class
A Compressed gases, B5 Flammable aerosol, D2A Very toxic materials, D2B Toxic materials.

16. OTHER INFORMATION

Prepared By	Mike McDowell
Supercedes Date	Not applicable
Issuing Date	10/18/2010
Reason for Revision	No information available.
Glossary	No information available.
List of References.	No information available.

CERTIFIED LABS, DIV. OF NCH CORP. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage or disposal of the product. The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

MATERIAL SAFETY DATA SHEET

ULTRACUT 250R

SECTION 1 Product and Company Information

Product identifier	Rustlick Ultracut 250R
Product use	Moderate-duty water-soluble oil
Manufacturer	*ITW* ROCOL North America 3624 West Lake Avenue Glenview, Illinois 60026 1-800-452-5823
Emergency info	CHEMTREC, 1-800-424-9300

SECTION 2 Hazards Identification

Emergency overview	No hazards resulting from the material supplied.
HMIS rating	
Health	**1**
Flammability	**1**
Reactivity	**0**
Personal protection	**B**
Routes of entry	Skin, eyes, respiratory tract, digestive system.
Potential short-term health effects	
Skin	May cause mild irritation.
Eyes	May cause mild irritation.
Inhalation	May cause irritation to nose and throat. Inhalation of vapors or mist may cause headache, dizziness, and drowsiness.
Ingestion	Harmful if swallowed, may cause nausea and vomiting. Ingesting large quantities may cause injury or death.
Potential long-term health effects	Not known

SECTION 3 Chemical Composition/Hazardous Ingredients

Ingredients	**CAS #**	**OSHA/PEL** (TWA)	**ACGIH/TLV** (TWA)
Hydrotreated heavy naphthenic distillates	64742-52-5	5 mg/m^3	5 mg/m^3
2-(2-aminoethoxy)ethanol	929-06-6		

* Exact chemical identities and percentages are withheld as trade secrets provided under 29CFR.1910.1200.

SECTION 4 First Aid Measures

Skin contact Immediately wash the exposed area thoroughly with soap and water. Remove contaminated clothing. Wash before reuse. If irritation persists, consult physician.

Eye contact In case of contact, immediately flush with water for at least 15 minutes. If irritation persists, consult physician.

Inhalation If inhaled, move to fresh air. If irritation persists, consult physician.

Ingestion If swallowed, DO NOT induce vomiting. Contact a physician immediately. If vomiting occurs, keep head below hips to prevent aspiration of liquid into the lungs.

SECTION 5 Fire Fighting Measures

Flammable limits Not available

Products of combustion Oxides of carbon (CO, CO_2).

Flash point (method) > 200°F (93°C) (PMCC)

Auto-ignition temperature Not available

Explosion data

Sensitivity to mechanical impact None known

Sensitivity to static discharge None known

Fire-fighting media and instructions In case of fire use carbon dioxide, dry chemicals, or foam.

Special fire-fighting procedures/equipment Self contained breathing apparatus and protective clothing is recommended to protect fire fighters from any hazardous combustion or decomposition products. Pressure build-up in the closed container may occur due to heat exposure.

SECTION 6 Accidental Release Measures

Personal precautions Use appropriate safety equipment. Avoid inhaling vapors or mist. Avoid contact with eyes, skin and clothing.

Environmental precautions Do not allow spilled product to enter drains, sewers, or waterways.

Cleanup Ventilate area. Eliminate all sources of heat and flame. Stop leak if safe to do so. Contain spill. Use absorbent material, such as vermiculite or sand. Place in suitable container for later disposal.

Prohibited materials None

SECTION 7 Handling and Storage

Handling Use appropriate safety equipment. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Keep away from extreme heat. Keep container closed when not in use.

Storage Store away from extreme heat, flame, or ignition sources. Pressure build up may occur due to heat exposure or temperature change. Release pressure by slowly opening container.

SECTION 8 Exposure Controls and Personal Protection

Hygiene measures	Avoid contact with eyes, skin and clothing. Do not eat, drink, or smoke while handling this product.
Control measures	General ventilation should be sufficient. Providing approved respirators for emergencies, or when mist/vapor concentrations are unknown may be warranted. Availability of eye wash station, washing facilities and safety shower is recommended.
Personal protection	
Skin	Wear suitable gloves; chemical resistant gloves, such as polyvinyl chloride-coated, are recommended. Wear protective clothing suitable to prevent contact. Remove contaminated clothing and launder before wearing.
Eyes	Safety glasses are recommended.
Respiratory	Not normally required. Control vapor or mist concentrations below exposure limits through use of general or local exhaust ventilation.

SECTION 9 Physical and Chemical Properties

Physical state	Liquid
Color	Light brown
Odor	Characteristic
pH at 10%	9.5
Boiling point	> 212°F (100°C)
Melting/freezing point	Not available
Vapor pressure	< 1
Solubility in water	Emulsifies
Specific gravity	0.98
Vapor density	Heavier than air
Evaporation rate	> 0.1
Volatile organic compounds	Nil

SECTION 10 Reactivity and Stability

Stability and reactivity	Stable. Hazardous polymerization will not occur.
Conditions to avoid	None
Materials to avoid	Strong oxidizing or reducing agents.
Hazardous decomposition products	Fumes and possible smoke containing carbon monoxide and carbon dioxide (CO, CO_2).

SECTION 11 Toxicological Information

Acute studies	Tests on similar materials show a low order of acute oral and dermal toxicity.
Eye effects	Minimal irritation on contact.
Skin effects	May cause mild irritation with prolonged and repeated contact.
Acute oral effects	Tests on similar materials indicate low order of acute toxicity.
Acute inhalation	Low acute toxicity expected on inhalation.
Carcinogenic	None of the ingredients in this product are listed by IARC, ACGIH, NTP or OSHA as carcinogenic.

SECTION 12 Ecological Information

Environmental toxicity	None reported
Aquatic toxicity	No data

SECTION 13 Disposal Considerations

Handling for disposal	Absorb on suitable material and follow procedures listed below.
Methods of disposal	Dispose of in a manner that is recommended by local, state, provincial and federal laws and regulations.

SECTION 14 Transportation Information

Not classified as hazardous for transport according to IATA, 49CFR, and IMDG regulations.

SECTION 15 Regulatory Information

WHMIS information	No data
CEPA information	No data
TSCA information	All ingredients are included in the TSCA inventory.
SARA Title III	Contains no ingredients which exceed De Minimus reporting requirements.
California Prop 65	The product contains no chemicals known to the state of California to cause cancer or reproductive toxicity.

SECTION 16 Other Information

Prepared by *ITW* ROCOL North America, Leroy Hitchcock, 1-800-452-5823

Date of issue December 15, 2011 **Date of previous issue** December 15, 2008

References

1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices, 2004.
2. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2004.
3. US EPA Title III Lists of Lists - October 2001 version.
4. Material Safety Data Sheets from manufacturer.

CAM2 INTERNATIONAL, LLC MATERIAL SAFETY DATA SHEET

CAM2 International, LLC
P.O. Box 1119
Evergreen, CO 80437
Tel: 800-338-2262
MSDS on-line: www.CAM2International.com

CAM2 Tractor Hydraulic Fluid

MSDS No: 165
Ver. No: 2
Ver. Date: 2/1/2008

24-HOUR EMERGENCY NUMBERS:
PERS 1-800-633-8253
INT'L PERS 1-801-629-0667
CUSTOMER SERVICE:
303-292-0595

National Fire Protection Association **HMIS Rating**

0	Health	Health	0
1	Flammability	Flammability	1
0	Reactivity	Reactivity	0
0	Special	Special	0

Protective Equipment:

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**CAM2 Tractor Hydraulic Fluid**
Product Description:	Tractor Hydraulic Fluid
Chemical Name:	Tractor Hydraulic Fluid
Chemical Family:	Blend
Product Code:	165
Other Designations:	None
General Use:	Tractor Hydraulic Fluid
Manufacturer:	CAM2 International, LLC P.O. Box 1119, Evergreen, CO 80437, Phone (800) 338-2262 (Hours of operation: Mon-Fri 7:00am-5:00pm MST)

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

EXPOSURE GUIDELINES Component/CAS Number Limits for the Product	LO%	HI%	OSHA TWA	OSHA STEL	ACGIH TWA	ACGIH STEL	UNIT
			5		5		MG/M3
Severely Solvent Refined Heavy Paraffinic Petroleum Oil							
64741-88-4	80.00	95.00	5		5		MG/M3
Zinc Dialkyl Dithiophosphate							
68649-42-3	0.00	1.50		NO SPECIFIC LIMIT			
Acrylic Copolymer							
68171-46-0	0.0	1.0		NO SPECIFIC LIMIT			
Calcium Sulfonate							
61789-86-4	0.0	5.0		NO SPECIFIC LIMIT			

--- FOR DISCLAIMER OF LIABILITY SEE FINAL PAGE ---

2-Ethylhexanol						
	104-76-7	0.0	1.0		NO SPECIFIC LIMIT	
Polymer of Styrene & Naleic C4-C20 Dialkylesters						
	68910-21-4	0.0	5.0		NO SPECIFIC LIMIT	
Toluene						
	108-88-3	0.00	1.00	100	150	50

SECTION 3 – HAZARDOUS IDENTIFICATION (HMIS)

EMERGENCY OVERVIEW
MAY CAUSE SKIN IRRITATION

APPEARANCE: Amber Fluid ODOR: Slight Odor

POTENTIAL HEALTH EFFECTS:

SKIN CONTACT: PRACTICALLY NON- TOXIC IF ABSORBED (LD50 > 2000 MG'KG). MAY CAUSE

MODERATE IRRITATION WITH PROLONGED OR REPEATED CONTACT..
CARCINOGEN LISTED BY: IARC(NO) NTP(NO) OSHA9NO) ACGIH(NO) OTHER(NO)

SECTION 4 – FIRST AID MEASURES

Emergency and First Aid Procedures:

Eye contact: Flush eyes with large amounts of water for at least 15 minutes. If irritation persists, obtain medical attention.

Skin contact: Wash affected area thoroughly with soap and water until no odor remains. If redness or swelling develops, obtain medical assistance. Wash clothing before reuse.

Ingestion: Practically non-toxic. Induction of vomiting not required. Obtain medical emergency medical attention. Small amounts which accidentally enter mouth should be rinsed out until taste of substance is no longer detected.

Inhalation: Move to fresh air.

Note to Physicians: Treat symptomatically
Special Precautions/Procedures: None known

SECTION 5 – FIRE-FIGHTING MEASURES

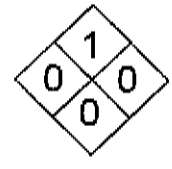
Extinguishing Media: Water spray, dry chemical, carbon dioxide (CO_2), foam.

Flash Point: 390 °F Minimum, 201 °C Minimum

Flash Point Method: Cleveland Open Cup

Auto Ignition Temperature: 675 °F (Estimated)
359 °C (Estimated)

NFPA



Flammable (Explosive) Limits (% by volume in air): Lower: Not Applicable
Upper: Not Applicable

Flammability Classification: Not Flammable

Fire-Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any confined space without proper PPE, including an SCBA.

Fire-Fighting Equipment: Fire may produce toxic thermal decomposition products; wear an (SCBA).

Hazardous Combustion Products: Highly dependent on combustion conditions. A complex mixture forms when this material undergoes combustion. Examples: carbon dioxide, water vapor, unidentified organic compounds.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: Recover usable material by convenient method; residual may be removed by wipe or wet mop

Small Spills:	Small spills should be absorbed with a suitable inert material (sand, earth, clay, etc.). Remove the absorbed material and place in an appropriate chemical waste container for disposal.
Large Spills:	For large spills, dike and pump into suitable containers. Clean up residual with suitable inert material..
Containment:	For large spills, dike far ahead of liquid spill for later disposal.
Regulatory Requirements:	Follow applicable Federal, State and Local regulations.

SECTION 7 – HANDLING AND STORAGE

Precautionary Measures:	Keep out of reach of children.
Static Hazard:	Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient.
Storage Requirements:	NFPA Class IIIB Storage.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

General Considerations:	Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances when designing engineering controls suitable for the workplace.
Engineering Controls:	Use in a well ventilated area.
Protective Clothing/Equipment:	
Skin:	No special protective clothing is normally needed.
Eye/Face:	No special eye protection is normally needed.
Respiratory Protection:	No respiratory protection is normally needed.
Work and Hygienic Practices:	Wash or rinse hands before touching eyes or contact lenses, and before eating.
Safety Stations:	Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and odor:	Amber Fluid, Slight Odor
Evaporation Rate:	1000X Slower (ETHYL ETHER=1)
Boiling Point:	High
Vapor Pressure:	<0.0001 (MM HG @ 20°C)
Pour Point, °C:	-34 (Estimated)
Specific Gravity (water =1):	0.86 (Estimated)
API Gravity:	31.0 (Estimated)
Viscosity @ 210 °F, SUS:	58.3 (Estimated)
Viscosity @ 40 °C, CST:	58.9 (Estimated)
Vapor Density (Air =1):	>1
Solubility:	Soluble in hydrocarbons; almost completely insoluble in water
Molecular Weight:	N/A (G/MOLE)
Melting Point:	N/A
Packing Density:	N/A
Octanol / Water Coeff.:	N.D.
Odor Threshold:	N.D.
Vapor Density:	10+ (Air = 1)

SECTION 10 – STABILITY AND REACTIVITY

Stability:	Stable
Hazardous Polymerization:	Will not occur.
Materials to Avoid:	Strong oxidizing agents.
Conditions to Avoid:	Strong oxidizing agents.
Hazardous Decomposition:	Combustion will produce carbon monoxide and asphyxiants.

SECTION 11 – TOXICOLOGICAL INFORMATION

FOR THE PRODUCT –
INHALATION: Low acute toxicity. SKIN: expected to be acutely non-toxic if absorbed, mild irritation with prolonged/repeated contact. EYE: mildly irritating on contact. ORAL: practically non-toxic

SEVERELY SOLVENT REFINED HEAVY PARAFFINI C PETROLEUM OIL –

INHALATION: low acute toxicity. SKIN: practically non-toxic if absorbed may cause moderate irritation with prolonged and repeated contact. EYE: minimally irritating on contact. INGESTION: Practically non-toxic if swallowed.

ETHYLENE/PROPYLENE COPOLYMER: No data available for all routes of exposure
ZINC DIALLKLY DITHIO PHOSPHATE

INHALATION: Toxic hydrogen sulfide is generated when heated above 200 deg. F. This can cause central nervous system (brain) effects, nausea, dizziness, confusion, loss of sense of smell, muscle cramps, in coordination, unconsciousness, coma, respiratory failure, or death.

SKIN: Prolonged or repeated contact may cause moderate irritation, redness, drying, cracking, dermatitis.

EYE: Irritant. ORAL: Harmful if swallowed. BORATED POLYISOSOBUT ENYL SUCCINIC ANHYDRIDE –
No data available for all routes of exposure.

ACRYLIC COPOLYMER: No data available for all routes of exposure.

SEVERELY SOLVENT REFINED HEAVY PARAFFINI C PETROLEUM OIL: INHALATION: low acute toxicity.

SKIN: practically non-toxic if absorbed may cause moderate irritation with prolonged and repeated contact.

EYE: minimally irritating on contact.

INGESTION: Practically non-toxic if swallowed. ALKYL DIPHENYLAMINE: No data available for inhalation or eye contact. SKIN: Possible allergic reaction. ORAL: Toxic if swallowed. May cause loss of appetite, diarrhea, & death.

POLYBUTENE: No significant effects by inhalation, skin absorption, or eye contact. ORAL: Practically nontoxic if swallowed.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:	No Data Available.
Environmental Fate:	This material is not expected to be readily biodegradable.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste disposal method:	Do not flush to drain/sewer. Contact an authorized disposal service. Disposal should be in accordance with all applicable federal, state and local laws and regulations.
Container Cleaning and Disposal:	Containers should be cleaned of residual product before disposal, and disposed of in accordance with all applicable laws and regulations.

SECTION 14 – TRANSPORT INFORMATION

DOT Shipping Name:	Non-Hazardous Petroleum Lubricating Oil

Shipping Symbols:	Not Regulated
Hazard Class:	Not Regulated
DOT Identification No.:	Not Regulated
Packing Group:	Not Regulated
Label:	Not Regulated
Packaging Authorizations:	Not Regulated
Quantity Limitations:	None

SECTION 15 – REGULATORY INFORMATION

TSCA: This material is in compliance with the TOXIC SUBSTANCES CONTROL ACT (15 USC 2601 -2629) and is listed in the TSCA Inventory.

SARA 302 THRESHOLD PLANNING QUANTITY,		N/A	
SARA 304 REPORTABLE QUANTITY		N/A	
SARA 311/312 REPORTING:	Health	Immediate (Acute)	No
	Health	Delayed (Chronic)	No
	Physical	Fire	No
	Physical	Sudden Release of Pressure	No
	Physical	Reactive	No

When a product and/or component is listed below, the regulatory list on which it appears is indicated. ZINC

DIALKYL DITHIOPHOSPHATE – NJ 01

01=SARA 313	02= SARA 302/304	03=IARC CARCINOGEN
04=OSHA CARCINOGEN	05=ACGIH CARCINOGEN	06=NTP CARCINOGEN
07=CERCLA 302.4	08=WHMIS CONTROLLED PROD.	
10=OTHER CARCINOGEN		
PA=PA RTK	NJ=NEW JERSEY RTK	CA=CALIFORNIA PROP 65
MA=MASS. RTK	MI-MICHIGAN 406	MN=MINNESOTA RTK
FL=FLORIDA	RI=RHODE ISLAND	IL=ILLINOIS
NY=NEW YORK	WV=WEST VIRGINIA	CT=CONNECTICUT
LA=LOUISIANA	ME=MAINE	OH=OHIO

SECTION 16 – OTHER INFORMATION

Prepared By: **CAM2 International, LLC**

Disclaimer: THE INFORMATION GIVEN HEREIN IS GIVEN IN GOOD FAITH AND FROM SOURCES WE BELIEVE RELIABLE. BUT NO WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS IS MADE.

The conditions or methods of handling, storage, use and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not apply.

CONSULT CAM2 INTERNATIONAL, LLC FOR FURTHER INFORMATION.

- - - FOR DISCLAIMER OF LIABILITY SEE FINAL PAGE - - -

International Petroleum Co.

UNIVERSAL TRACTOR FLUID

DESCRIPTION

IPC Universal Tractor Fluid is a high quality hydraulic and power shift transmission fluid. Designed for use in agricultural farm equipment, it is also suitable for use in other applications that place tough demands on power driven equipment (i.e. off-highway vehicles, construction machinery and industrial machines). Ideal for gears, pumps, differentials, final drives, bearings, wet brakes, transmissions and PTO clutches.

FEATURES & BENEFITS

- Suppresses brake chatter without reducing braking capacity.
- Works equally well in high and low temperatures.
- Reduces corrosion, even in the presence of water.
- Available in 2 different grades for Winter (SAE 5W20) and Summer (SAE 10W30).
- Prevents oil leaks caused by hardening, shrinking or over-swelling of seals.
- Stall time of less than one second (PTO requires less than three seconds).
- Extends the life of brakes, pumps, seals and drive-trains.
- Reduced clutch slippage and burn-out.

APLICATIONS

- John Deere J20D, J20C, J14 (A,B,C, JDT303), J20(A,B, Hy-Gard), J21A.
- Ford M2C41B, M2C48B, M2C48C, M2C86C, M2C134D.
- Massey-Ferguson M1110, M1127A, M1127B, M1129A, M1135, M1139, M1141.
- J.I Case MS1204 (JIC185), MS105, MS1206, MS1207, MS1210 (JIC145).
- Power shift transmissions specifying Allison C-3/C-4 or CAT TO-2 fluids.
- Kubota B6.
- Mobile equipment hydraulic systems.
- Vickers 35VQ25.
- White Farm Q1826.

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

SAE GRADE	10W30	5W20
SG GRAVITY@ 60°F	0.866	0.863
VISCOSITY, cSt		
@ 40°C	61.43	39.38
@ 100°C	10.0	7.3
VISCOSITY INDEX	149	152
FLASH POINT, °C	215	210
POUR POINT, °C	-36	-36
COLOR, (ASTM)	2.0	L2.0

Note: The values shown are representative of current production and may vary within modest ranges.

Rev. 0806

1745 E 165th Street
Hammond, IN 46320

(219) 932-5000
(219) 932-0995

ARCO

SAFETY DATA SHEET

bp

Section 1. Identification

Product name	ARCO Unleaded Gasoline
Other means of identification	ARCO Unleaded Regular, Midgrade and Premium gasolines; ARCO EC Unleaded Regular, Midgrade and Premium gasolines, CARB Gasoline
SDS #	APPC306
Code	APPC306

Relevant identified uses of the substance or mixture and uses advised against

Product use	USE AS MOTOR FUEL ONLY.
Supplier	BP Products North America Inc. 150 West Warrenville Road Naperville, Illinois 60563-8460 USA
EMERGENCY HEALTH INFORMATION:	1 (800) 447-8735 Outside the US: +1 703-527-3887 (CHEMTREC)
EMERGENCY SPILL INFORMATION:	1 (800) 424-9300 CHEMTREC (USA)
OTHER PRODUCT INFORMATION	1 (866) 4 BP - MSDS (866-427-6737 Toll Free - North America) email: bpcares@bp.com

Section 2. Hazards identification

OSHA/HCS status	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	FLAMMABLE LIQUIDS - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION (Unborn child) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms

Signal word	Danger
Hazard statements	Extremely flammable liquid and vapor. Causes serious eye irritation. Causes skin irritation. May cause genetic defects. May cause cancer. Suspected of damaging the unborn child. May be fatal if swallowed and enters airways.

Section 2. Hazards identification

May cause drowsiness and dizziness.

Precautionary statements

Prevention	Obtain special instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Avoid breathing vapor. Wash thoroughly after handling. Avoid release to the environment.
Response	IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	Store in well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	Contains Benzene. Prolonged or repeated exposure to benzene can cause anaemia and other blood diseases, including leukemia. See toxicological information (Section 11).

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Ingredient name	CAS number	%
Gasoline	Mixture	90 - 100
Ethanol	64-17-5	0 - 10
Contains:		
Benzene	71-43-2	0 - 3
Cyclohexane	110-82-7	0 - 1
Ethylbenzene	100-41-4	0 - 2
Toluene	108-88-3	4 - 11
1,2,4-Trimethylbenzene	95-63-6	0 - 3
xylene	1330-20-7	4 - 11
Naphthalene	91-20-3	0 - 0.5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
Skin contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.
Inhalation	If inhaled, remove to fresh air. Get medical attention. If exposure to vapor, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Section 4. First aid measures

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Specific treatments

No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray. This substance will float and can be reignited on surface water.

Unsuitable extinguishing media

Do not use water jet. Never use water.

Specific hazards arising from the chemical

Flammable liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous combustion products

Combustion products may include the following:
carbon dioxide
carbon monoxide
other hazardous substances.

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Special remarks on fire hazards

Do not use water jet.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources. Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained positive pressure breathing apparatus (SCBA).

Section 6. Accidental release measures

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions

Liquid leaks generate large volumes of flammable vapor, heavier than air, which may travel to remote sources of ignition (eg. along drainage systems). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid exposure during pregnancy. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth.

To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/ containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 7. Handling and storage

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry to any tanks or other confined space requires a full risk assessment and appropriate control measures to be put in place in conformance with appropriate regulations and industry practice on confined space entry. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapor mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurized fuel pipes, the vapor or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapor concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume.

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Gasoline	**ACGIH TLV (United States).** TWA: 300 ppm 8 hours. Issued/Revised: 5/1996 TWA: 890 mg/m³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996 STEL: 1480 mg/m³ 15 minutes. Issued/Revised: 5/1996
Ethanol	**ACGIH TLV (United States).** STEL: 1000 ppm 15 minutes. Issued/Revised: 11/2008 **OSHA PEL (United States).** TWA: 1900 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 1000 ppm 8 hours. Issued/Revised: 6/1993
Benzene	**ACGIH TLV (United States). Absorbed through skin.** STEL: 8 mg/m³ 15 minutes. Issued/Revised: 5/1997 STEL: 2.5 ppm 15 minutes. Issued/Revised:

Section 8. Exposure controls/personal protection

	5/1997 TWA: 1.6 mg/m³ 8 hours. Issued/Revised: 5/1997 TWA: 0.5 ppm 8 hours. Issued/Revised: 5/1997 **OSHA PEL (United States).** STEL: 5 ppm 15 minutes. Issued/Revised: 6/1993 TWA: 1 ppm 8 hours. Issued/Revised: 6/1993 **OSHA PEL Z2 (United States).** AMP: 50 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 25 ppm Issued/Revised: 6/1993 TWA: 10 ppm 8 hours. Issued/Revised: 6/1993
xylene	**ACGIH TLV (United States).** STEL: 651 mg/m³ 15 minutes. Issued/Revised: 5/1996 STEL: 150 ppm 15 minutes. Issued/Revised: 5/1996 TWA: 434 mg/m³ 8 hours. Issued/Revised: 5/1996 TWA: 100 ppm 8 hours. Issued/Revised: 5/1996 **OSHA PEL (United States).** TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993
toluene	**OSHA PEL Z2 (United States).** AMP: 500 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 300 ppm Issued/Revised: 6/1993 TWA: 200 ppm 8 hours. Issued/Revised: 6/1993 **ACGIH TLV (United States).** TWA: 20 ppm 8 hours. Issued/Revised: 11/2006
1,2,4-Trimethylbenzene	**ACGIH TLV (United States).** TWA: 123 mg/m³ 8 hours. Issued/Revised: 9/1994 TWA: 25 ppm 8 hours. Issued/Revised: 9/1994
ethylbenzene	**ACGIH TLV (United States).** TWA: 20 ppm 8 hours. Issued/Revised: 12/2010 **OSHA PEL (United States).** TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993
cyclohexane	**ACGIH TLV (United States).** TWA: 100 ppm 8 hours. Issued/Revised: 1/2002 **OSHA PEL (United States).** TWA: 1050 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 300 ppm 8 hours. Issued/Revised: 6/1993
naphthalene	**ACGIH TLV (United States). Absorbed**

Section 8. Exposure controls/personal protection

	through skin. TWA: 52 mg/m³ 8 hours. Issued/Revised: 5/1996 TWA: 10 ppm 8 hours. Issued/Revised: 5/1996 **OSHA PEL (United States).** TWA: 50 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 10 ppm 8 hours. Issued/Revised: 6/1993

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves. Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals. Nitrile gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

Body protection

Use of protective clothing is good industrial practice. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Wear suitable protective clothing. Footwear highly resistant to chemicals. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static. When there is a risk of ignition wear inherently fire resistant protective clothes and gloves. Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal

Section 8. Exposure controls/personal protection

	clothes. When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Use only with adequate ventilation. Do not breathe vapor or mist. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter. If operating conditions cause high vapor concentrations or the TLV is exceeded, use NIOSH-certified, supplied-air respirator. Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn. The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	Clear
Odor	Hydrocarbon.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	26.67 to 221°C (80 to 430°F)
Flash point	Closed cup: -42.778°C (-45°F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	Lower: 1.3% Upper: 7.6% (Estimated.)
Vapor pressure	48.134 to 103.146 kPa (361.97 to 775.66 mm Hg)
Vapor density	3 to 4 [Air = 1]
Density	750 kg/m^3 (0.75 g/cm^3)
Solubility	Very slightly soluble in water
Solubility	Very slightly soluble in the following materials: cold water.
Partition coefficient: n-octanol/water	>3
Auto-ignition temperature	257°C (494.6°F)
Decomposition temperature	Not available.
Viscosity	Not available.

Section 10. Stability and reactivity

Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability The product is stable.

Possibility of hazardous reactions Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid Keep away from heat, sparks and flame. Avoid all possible sources of ignition (spark or flame).

Incompatible materials Reactive or incompatible with the following materials: oxidizing materials. Chlorine and Fluorine

Hazardous decomposition products Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure	Remarks
Gasoline	LC50 Inhalation Vapor	Rat	>5610 g/m³ analytical	4 hours	Based on Gasoline
	LC50 Inhalation Vapor	Rat	>7630 mg/m³ Nominal	4 hours	Based on Gasoline
	LD50 Dermal	Rabbit	>2000 mg/kg	-	Based on Gasoline
	LD50 Oral	Rat	>5000 mg/kg	-	Based on Gasoline
Ethanol	LC50 Inhalation Vapor	Rat	124.7 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	116.9 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	133.8 mg/l	4 hours	Based on Ethanol
	LD50 Oral	Rat	10470 mg/kg	-	Based on Ethanol

Conclusion/Summary Not available.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Gasoline	Rabbit	Skin - Irritant	-	-	-	-	Based on Gasoline
	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Gasoline
Ethanol	Rabbit	Skin - Non-irritant to skin.	-	-	-	-	Based on Ethanol

Section 11. Toxicological information

	Rabbit	Eyes - Cornea opacity	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Iris lesion	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Irritant	-	-	-	-	Based on Ethanol

Sensitizer

Product/ingredient name	Route of exposure	Species	Result	Remarks
Gasoline	skin	Guinea pig	Not sensitizing	Based on Gasoline

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Gasoline	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Gasoline
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Gasoline
	EPA OPPTS 870.5395	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline vapor condensate
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline
Ethanol	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Ethanol
	Equivalent to OECD 473	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Ethanol
	Equivalent to OECD 478	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Ethanol

Conclusion/Summary May cause genetic defects.

Carcinogenicity

Product/ingredient name							
Gasoline	Equivalent to OECD	451	Rat	Inhalation	113 weeks	Negative - Inhalation - Unspecified	Based on Gasoline
	Equivalent to OECD	451	Mouse	Dermal	102 weeks	Negative - Dermal - Unspecified	Based on Gasoline
Ethanol	EPA	OPPTS 870.4200	Mouse	Oral	105 weeks	Positive - Oral - Unspecified	Based on Ethanol

	Equivalent to OECD	-	Rat	Oral	104 weeks	Negative - Oral - Unspecified	Based on Ethanol

Conclusion/Summary May cause cancer

Classification

Product/ingredient name	OSHA	IARC	NTP
Gasoline	-	2B	-
toluene	-	3	-
xylene	-	3	-
Benzene	+	1	Known to be a human carcinogen.
ethylbenzene	-	2B	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Descriptors:

OSHA:
+ - Potential occupational carcinogen

IARC:
1 - Carcinogenic to human.
2A - Probable human carcinogen.
2B - Possible carcinogen to human.
3 - Not classifiable as a human carcinogen.
4 - Probably not a human carcinogen.

NTP:
Proven - Known to be human carcinogens.
Possible - Reasonably anticipated to be human carcinogens.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Result	Exposure
Gasoline	-	Negative	-	Rat	Inhalation	2 generation
	-	-	Negative	Rat	Inhalation	14 days
Ethanol	-	Positive	-	Rat	Oral	2 generation
	-	-	Negative	Rat	Inhalation	18 days

Conclusion/Summary Development: Suspected of damaging the unborn child.
Fertility: Not classified. Based on available data, the classification criteria are not met.
Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline	Category 3	Not applicable.	Narcotic effects
xylene	Category 3	Not applicable.	Respiratory tract irritation
toluene	Category 3	Not applicable.	Narcotic effects
1,2,4-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
cyclohexane	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
toluene	Category 2	Not determined	ears
Benzene	Category 1	Not determined	blood system

Aspiration hazard

Section 11. Toxicological information

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1
xylene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact Causes serious eye irritation.

Skin contact Causes skin irritation.

Inhalation Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Ingestion Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Skin contact Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

General Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Carcinogenicity May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity May cause genetic defects.

Teratogenicity Suspected of damaging the unborn child.

Developmental effects No known significant effects or critical hazards.

Section 11. Toxicological information

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

Additional information Gasoline - Excess exposure to vapors may produce headaches, dizziness, nausea, drowsiness, irritation of eyes, nose and throat and central nervous system depression. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Inhalation of unleaded gasoline vapors did not produce birth defects in laboratory animals. Ingestion of this material can cause gastrointestinal irritation and diarrhea.

In a long-term inhalation study of whole unleaded gasoline vapors, exposure-related kidney damage and kidney tumors were observed in male rats. Similar kidney effects were not seen in female rats or in mice. At the highest exposure level (2056 ppm), female mice had an increased incidence of liver tumors. Results from subsequent scientific studies have shown that a broad variety of chemicals cause these kidney effects only in the male rat. Further studies have discovered the means by which the physiology of the male rat uniquely predispose it to these effects. Consequently, the Risk Assessment Forum of the Environmental Protection Agency has recognized that these responses are not predictive of a human health hazard. The liver tumors that were increased in the high-dose female mice are likewise of questionable significance because of their high spontaneous occurrence even without chemical exposure and because the rate of their occurrence is accelerated by a broad spectrum of chemicals not commonly considered to be carcinogens (e.g., phenobarbital). Thus, the significance of the mouse liver tumor response in terms of human health is questionable.

Gasoline is a complex mixture of hydrocarbons and contains benzene (typically no more than 2 volume%), toluene, and xylene. Chronic exposure to high levels of benzene has been shown to cause cancer (leukemia) in humans and other adverse blood effects (anemia). Benzene is considered a human carcinogen by IARC, NTP and OSHA. Over exposure to xylene and toluene can cause irritation to the upper respiratory tract, headache and narcosis. Some liver damage and lung inflammation were seen in chronic studies on xylene in guinea pigs but not in rats.

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Gasoline as a mixture is classified as a 2B (possible human) carcinogen by IARC.

Gasoline engine exhaust is classified as possibly carcinogenic to humans by IARC (2B). This classification is based primarily on animal and in vitro studies of gasoline engine exhaust condensates/extracts. Studies of the gaseous exhaust stream in animals did not provided sufficient evidence for classification as a carcinogen.

Gasoline: Additional toxicity information on the components:

Benzene: Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death.

Benzene: Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to high levels of benzene have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin.
Inhalation and forced feeding studies of benzene in laboratory animals have produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to higher dosage levels resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material.

Toluene: Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material. Deliberate inhalation of high concentrations of toluene has been linked to damage of the brain, liver and kidney. Inhalation of very high concentrations of toluene, such as in cases of solvent abuse, has resulted in sudden death which may be a result of cardiac arrhythmia or central nervous system depression. Mental and/or growth retardation has been reported in children of women who deliberately inhale toluene during pregnancy (usually at thousands of ppm). Fetal developmental toxicity was observed when pregnant rats were exposed to toluene at levels of 1500 ppm. Maternal toxicity was also observed at this concentration. Prolonged, high level exposure to toluene in laboratory animals has resulted in hearing loss. Exposure studies in rats have resulted in adverse effects on the kidney, liver and central nervous system. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired color vision and decreased performance in some neurobehavioral tests. There are occupational studies which report an association between inhalation exposure to toluene and adverse effects on reproduction including spontaneous abortion. The methodology of these studies and the reliability of the results have been questioned. In a two-generation study in rats, inhalation of toluene at levels up to 2000 ppm did not produce adverse effects on fertility or reproductive performance.

Xylenes: Xylene has been reported to cause central nervous system effects at concentrations above the recommended exposure limit. Xylene vapor becomes irritating at relatively high levels. In one study, eye irritation was reported at exposures of 460 ppm and in one person at 230 ppm after 15 minutes. In another study, no one reported eyes, nose and throat irritation at mixed xylene exposures up to 230 ppm for 30 minutes. Dermal LD50 is expected to be greater than 10g/kg in rabbits, based on test results from similar materials.

Mixed xylenes caused slight hearing loss in rats exposed to 800 ppm in the air for 14 hours/day for six weeks. There is no information available for lower concentrations; however, similar chemicals that have caused these hearing effects at similar concentrations have not caused effects at lower concentrations.

Pregnant animals exposed to xylene or its isomers have been reported to cause development toxicity in rodents when exposed by inhalation. The developmental effects observed consisted of delayed development and minor skeletal variations, but no malformations. Because of the high exposure levels used in these studies, we do not believe that these results imply an increased risk of reproductive toxicity to workers exposed to xylene levels at or below the exposure limits.

Xylene and its isomers are not genotoxic.

Technical grade xylene has been tested in a National Toxicology Program carcinogenicity study in rats and mice dosed orally for two years. There was no evidence of carcinogenicity.

Ethylbenzene: :The National Toxicology Program (NTP) conducted a 13-week inhalation study with male and female rats and mice at exposure concentrations ranging from 100

Section 11. Toxicological information

to 1000 ppm ethylbenzene. No rats or mice died during the study. Kidney, liver, and lung weights were increased in the exposed rats, while weight increases were observed only in the livers of exposed mice. Treatment-related histopathologic changes were not observed in any tissues of rats and mice.
NTP also exposed male and female rats and mice by inhalation to 0, 75, 250, or 750 ppm ethylbenzene for 2 years. There was a statistically significant increase in the number of kidney tumors in male and female rats at 750 ppm. There were also increased incidences of lung tumors in male mice and liver tumors in female mice that were statistically significant at 750 ppm. Except for the male rat kidney tumors, the incidence of the tumors were within the range observed for non-exposed animals from other studies conducted by NTP. The significance of these findings to humans is unknown. Ethylbenzene is not genotoxic. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and found it to be possibly carcinogenic to humans (Group 2B).

Ethylbenzene is not genotoxic.

This product contains trimethylbenzenes. These compounds cause irritation to the eyes, nose and respiratory tract. Repeated dermal exposure can defat and irritate the skin. Inhalation may cause dizziness and drowsiness. Studies in laboratory animals with mixtures of C9 aromatic hydrocarbons produced adverse effects on development such as increased fetal mortality, reduced fetal weight, and delayed ossification at high exposure concentrations. Effects were reduced if exposure was terminated prior to delivery. There was no evidence of reproductive toxicity.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

Ethanol - Human data: In humans excessive consumption of alcoholic beverages during pregnancy is associated with the induction of Fetal Alcohol Syndrome in the offspring. Reduced birth weight and physical and mental defects occur. There is no evidence that such effects might be caused by exposures other than direct ingestion of alcoholic drinks. In humans high lifetime consumption of alcoholic beverages can be associated with certain cancers and effects on the liver. There is no evidence that these can be caused by exposure other than direct ingestion of alcoholic drinks (IARC 1988).

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Product/ingredient name	Species	Test/Result	Exposure	Effects	Remarks
Gasoline	Micro-organism	Acute EC50 15. 41 mg/l Nominal Fresh water	40 hours	growth inhibition	-
	Algae	Acute EL50 3.1 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Algae	Acute EL50 3.7 mg/l Nominal Fresh water	96 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute EL50 4.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on straight-run light gasoline
	Fish	Acute LL50 10 mg/l Nominal	96 hours	Mortality	Based on Naphtha

Section 12. Ecological information

		Fresh water			(petroleum), isomerisation
	Fish	Acute LL50 8.2 mg/l Nominal Fresh water	96 hours	Mortality	Based on Naphtha (petroleum), light alkylate
	Algae	Acute NOELR 0.5 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute NOELR 0.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on Straight run gas oil
	Daphnia	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic EL50 >40 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	Fish	Chronic LL50 5.2 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed
	Daphnia	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic NOELR 16 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	soil, plants	Chronic PNEC >0.4 mg/kg	-	-	-
Ethanol	Algae	EC50 675 mg/l	4 days	-	Based on Ethanol
	Aquatic plants	EC50 4432 mg/l	7 days	-	Based on Ethanol

Section 12. Ecological information

Daphnia	Acute LC50 5012 mg/l	48 hours	-	Based on Ethanol
Fish	Acute LC50 153 g/l	96 hours	-	Based on Ethanol
Fish	Acute LC50 14.2 g/l	96 hours	-	Based on Ethanol
Daphnia	Chronic LC50 2 mg/l	10 days	-	Based on Ethanol
Daphnia	Chronic LC50 9.6 mg/l	9 days	-	Based on Ethanol

Conclusion/Summary Not available.

Persistence and degradability

Partially biodegradable.

Product/ingredient name	Test	Result	Remarks
Ethanol	EPA	95 % - Readily - 15 days	Based on Ethanol
	EPA	84 % - Readily - 20 days	Based on Ethanol
	EPA	74 % - Readily - 5 days	Based on Ethanol
	EPA	74 % - Readily - 10 days	Based on Ethanol

Conclusion/Summary Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethanol	-	-	Readily

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239
Toluene; Benzene, methyl-	108-88-3	Listed	U220
Benzene (I,T)	71-43-2	Listed	U019
Cyclohexane (I); Benzene, hexahydro- (I)	110-82-7	Listed	U056

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN1203	UN1203	UN1203	UN1203
UN proper shipping name	GASOLINE	GASOLINE	MOTOR SPIRIT or GASOLINE or PETROL MARINE POLLUTANT	Motor spirit or Gasoline or Petrol
Transport hazard class(es)	3 	3 	3  	3 
Packing group	II	II	II	-----
Environmental hazards	No.	No.	Yes.	No.
Additional information	**Reportable quantity** 333.33 lbs / 151.33 kg [53.304 gal / 201.78 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. **Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity	The marine pollutant mark is not required when transported by road or rail. **Explosive Limit and Limited Quantity Index** 30 **Passenger Carrying Ship Index** 100 **Passenger Carrying Road or Rail Index** 5 **Special provisions** 17, 82, 88	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-E, S-E **Special provisions** 243	The environmentally hazardous substance mark may appear if required by other transportation regulations. **Passenger and Cargo Aircraft** Quantity limitation: 5 L Packaging instructions: 353 **Cargo Aircraft Only**Quantity limitation: 60 L Packaging instructions: 364 **Limited Quantities - Passenger Aircraft**

Section 14. Transport information

	limitation: 5 L **Cargo aircraft** Quantity limitation: 60 L **Special provisions** 144, 177, B1, B33, IB2, T4, TP1			Quantity limitation: 1 L Packaging instructions: Y341 **Special provisions** A100

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Proper shipping name MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gasoline and spirits

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	naphthalene	91-20-3	0 - 0.5
Supplier notification	toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	naphthalene	91-20-3	0 - 0.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts The following components are listed: XYLENE; TOLUENE; ETHYL ALCOHOL; BENZENE; PSEUDOCUMENE; ETHYL BENZENE; CYCLOHEXANE

New Jersey The following components are listed: XYLENES; BENZENE, DIMETHYL-; TOLUENE; BENZENE, METHYL-; ETHYL ALCOHOL; ALCOHOL; BENZENE; PSEUDOCUMENE; 1, 2,4-TRIMETHYL BENZENE; ETHYL BENZENE; BENZENE, ETHYL-; CYCLOHEXANE; NAPHTHALENE; MOTH FLAKES

Section 15. Regulatory information

Pennsylvania	The following components are listed: GASOLINE; BENZENE, DIMETHYL-; BENZENE, METHYL-; DENATURED ALCOHOL; BENZENE; PSEUDOCUMENE; BENZENE, ETHYL-; CYCLOHEXANE; NAPHTHALENE
California Prop. 65	**WARNING:** This product contains a chemical known to the State of California to cause cancer. ethylbenzene; naphthalene; cumene **WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. toluene **WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. Benzene Other Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including carbon monoxide, a Prop 65 reproductive toxin.

Other regulations

Australia inventory (AICS)	At least one component is not listed.
Canada inventory	All components are listed or exempted.
China inventory (IECSC)	At least one component is not listed.
Japan inventory (ENCS)	At least one component is not listed.
Korea inventory (KECI)	At least one component is not listed.
Philippines inventory (PICCS)	At least one component is not listed.
Taiwan inventory (CSNN)	
REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.

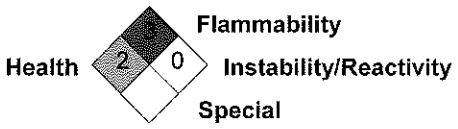
Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0
Personal protection		X

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

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



History

Date of issue/Date of revision	03/20/2015.
Date of previous issue	03/20/2015.

Section 16. Other information

Key to abbreviations

ACGIH = American Conference of Industrial Hygienists
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS Number = Chemical Abstracts Service Registry Number
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OEL = Occupational Exposure Limit
SDS = Safety Data Sheet
STEL = Short term exposure limit
TWA = Time weighted average
UN = United Nations
UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

WD-40

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER/SUPPLIER: **US Office:** **WD-40 Company** **1061 Cudahy Place** **San Diego, CA 92110** **Information Phone #: (619) 275-1400** **Emergency Phone # 24 hr:** **Chemtrec: (800) 424-9300** – Designated for use only in the event of chemical emergencies involving a spill, leak, fire exposure or accident involving chemicals.	**Canadian Office:** **WD-40 Products [Canada] Ltd.** **P.O. Box 220** **Toronto, Ontario M9C 4V3** **Information Phone #: (416) 622-9881** **Emergency Phone # 24 hr:** **Canutec: (613) 996-6666** – Designated for use only in the event of chemical emergencies involving a spill, leak, fire exposure or accident involving chemicals

PRODUCT NAME: WD-40 Aerosol
PRODUCT USE: Cleaner, lubricant.
MSDS DATE OF PREPARATION: March 27, 2014

SECTION 2 HAZARDS IDENTIFICATION

DANGER! Harmful or fatal if swallowed. Flammable aerosol. Contents under pressure. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.

POTENTIAL HEALTH EFFECTS:
PRIMARY ROUTES OF ENTRY: Inhalation, skin and eye contact.
ACUTE EFFECTS:
INGESTION: This product has low oral toxicity. Swallowing of the liquid contents may cause irritation, nausea, vomiting and diarrhea. The liquid contents are an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis.
EYES: Contact may be mildly irritating to eyes. May cause redness and tearing.
SKIN: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
INHALATION: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. May aggravate existing respiratory conditions such as asthma. Intentional abuse may be harmful or fatal.
CHRONIC EFFECTS: None expected.

SECTION 3 COMPOSITION INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent
Aliphatic Petroleum Distillates	64742-47-8 64742-88-7	50-70%
Petroleum Base Oil	64742-58-1 64742-53-6 64742-56-9 64742-65-0	30-35%
Non-Hazardous Ingredients	Proprietary	<10%
Carbon Dioxide	124-38-9	2-3%

SECTION 4 FIRST AID MEASURES

For Medical Emergencies Call 1-888-324-7596 (24 hours/day)
INGESTION: Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
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: If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.
UNUSUAL FIRE/EXPLOSION HAZARDS: Contents under pressure. Aerosol containers may burst under fire conditions. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

SECTION 6 ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

SECTION 7 HANDLING AND STORAGE

HANDLING: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use with adequate ventilation. Keep away from heat, sparks and open flames. Wash thoroughly with soap and water after handling. Do not puncture or incinerate containers. Keep can away from electrical current or battery terminals. Electrical arcing can cause burn-through (puncture) which may result in flash fire, causing serious injury. Keep out of the reach of children.

STORAGE: Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol.

SECTION 8 EXPOSURE CONTROLE/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

Aliphatic Petroleum Distillates	1200 mg/m3 TWA Manufacturer Recommended
Petroleum Base Oil	5 mg/m3 TWA ACGIH TLV 10 mg/m3 STEL ACGIH TLV
Non-Hazardous Ingredients	None Established
Carbon Dioxide	5000 ppm TWA, 30,000 ppm STEL ACGIH TLV

The Following Controls are Recommended for Normal Consumer Use of this Product

Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Safety glasses or goggles recommended.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.
Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

SECTION 9 PHYSICAL DATA

APPEARANCE AND ODOR: Light amber liquid with a mild odor.

Freezing Point:	Not Applicable	Odor Threshold:	Not Determined
Boiling Point:	361 - 369°F (183 - 187°C)	Specific Gravity:	0.78 – 0.82 @ 60°F
Solubility in Water:	Insoluble	pH:	Not Applicable
Vapor Pressure:	95-115 PSI @ 70°F	Vapor Density:	Greater than 1
Percent Volatile:	70-75%	VOC:	533 grams/liter (65%)
Coefficient of Water/Oil Distribution:	Not Determined	Kinematic Viscosity:	2.79-2.96cSt @ 100°F
Flash Point:	122°F (49°C) Tag Open Cup (concentrate)	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8.0%
Pour Point:	-63°C (-81.4°F) ASTM D-97	Explosion Impact:	None

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable
INCOMPATIBILITY: Strong oxidizing agents. Avoid heat and open flames. Do not puncture or incinerate containers.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide.

SECTION 11 TOXICOLOGICAL INFORMATION

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

SECTION 12 ECOLOGICAL INFORMATION

No data is currently available.

SECTION 13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: If this product becomes a waste, it would be expected to meet the criteria of a hazardous waste based on flammability. However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

SECTION 14 TRANSPORT INFORMATION

DOT Surface Shipping Description: Consumer Commodity, ORM-D
After 1/1/2014 UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited

Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

Canadian TDG Classification: Limited Quantity

IMDG Code Hazard Classification: UN1950, Aerosols, 2.1.

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

CERCLA 103 Reportable Quantity**:** This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills as required under federal, state and local regulations.

SARA TITLE III:
Hazard Category For Section 311/312**:** Acute Health, Fire Hazard, Sudden Release of Pressure
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

CANADIAN REGULATIONS:

Canadian Environmental Protection Act: All of the ingredients are listed on the Canadian Domestic Substances List or exempt from notification

Canadian WHMIS Classification: Class B-5 (Flammable Aerosol).
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

SECTION 16 OTHER INFORMATION

HMIS Hazard Rating: Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Physical Hazard – 0 (minimal hazard)

Revision Date: 03/27/14 Supersedes: 03/10/13

Prepared By: Industrial Health & Safety Consultants, Inc. 1-203-929-3473

This MSDS complies with OSHA guidelines set by 29 CFR 1910.1200 and the Canadian WHMIS regulations. The foregoing information has been compiled from sources believed to be accurate but is not warranted to be. Recipients are advised to confirm in advance of need that data is correct. Standards change without notice. It is the responsibility of the recipient to insure that their personnel have been notified of any changes which may affect them. The data provided on this MSDS are not meant to be used as specifications, only as guideline information as to the safe use of this product. User should refer to applicable laws before use.

N/D = Not Determined N/E = Not Established N/A = Not Applicable

1014100/No.0084102

MATERIAL SAFETY DATA SHEET

DI900 - ASPHALT EMULSION BLACKTOP SEAL ER

1. Product And Company Identification

Supplier	Manufacturer
HENRY COMPANY **909 N. Sepulveda Blvd., Suite 650** **El Segundo, CA 90245-2724** **Company Contact:** Technical Services **Telephone Number:** (800) 486-1278 **Web Site:** www.henry.com www.bakor.com	**HENRY COMPANY** **909 N. Sepulveda Blvd., Suite 650** **El Segundo, CA 90245-2724** **Company Contact:** Technical Services **Telephone Number:** (800) 486-1278 **Web Site:** www.henry.com www.bakor.com
Supplier Emergency Contacts & Phone Number **CHEMTREC: (800) 424-9300** **CHEMTREC: (703) 527-3887** **CANUTEC: (613) 996-6666**	**Manufacturer Emergency Contacts & Phone Number** **CHEMTREC: (800) 424-9300** **CHEMTREC: (703) 527-3887** **CANUTEC: (613) 996-6666**

Issue Date: 01/03/2011

Product Name: DI900 - ASPHALT EMULSION BLACKTOP SEAL ER
Product Code: DI900

2. Composition/Information On Ingredients

Ingredient Name	CAS Number		Percent Of Total Weight
petroleum asphalt	8052-42-4		15 - 30
attapulgite	12174-11-7		1 - 5
bentonite	1302-78-9		1 - 5
slate	1335-30-4		5 - 10
water	7732-18-5		55 - 75

EMERGENCY OVERVIEW

CAUTION! Vapor may cause light-headedness, headache, nausea, loss of coordination and respiratory tract irritation. Causes skin irritation.

Appearance/Odor: Black liquid, faint petroleum solvent odor

3. Hazards Identification

Primary Routes(s) Of Entry
Inhalation

Eye Hazards
May cause eye irritation (burning, tearing, redness or swelling).

Skin Hazards
May cause skin irritation and contact dermatitis upon prolonged contact.

Ingestion Hazards
May be harmful if swallowed. May cause gastric distress, vomiting and diarrhea.

Inhalation Hazards
Exposure to vapors may cause respiratory tract irritation. Inhalation of vapors or mists may cause central nervous system depression, light-headedness, headache, nausea and loss of coordination.

3. Hazards Identification - Continued

Chronic/Carcinogenicity Effects
None of the ingredients of this product comprising over 0.1% are classified as carcinogenic according to OSHA, National Toxicology Program (NTP), International Agency for Research on Cancer (IARC) or the American Conference of Governmental Industrial Hygienists (ACGIH).

4. First Aid Measures

Eye
In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation develops and persists.

Skin
Remove contaminated clothing and shoes. Wash affected areas with soap and water.

Ingestion
Get medical attention immediately. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious victim. Call a physician or poison control center immediately.

Inhalation
Remove the person from the contaminated area to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately.

5. Fire Fighting Measures

Flash Point: >212 °F >100 °C
Flash Point Method: Setaflash
Lower Explosive Limit: not available
Upper Explosive Limit: not available

Fire And Explosion Hazards
Thermal decomposition (burning) may release irritating, corrosive and/or toxic gases, vapors and fumes.

Extinguishing Media
Chemical foam, carbon dioxide (CO2), water fog or dry chemical.

Fire Fighting Instructions
Firefighters should wear self-contained breathing apparatus and full protective gear.

6. Accidental Release Measures

Contain and/or absorb spill with inert material (e.g. sand, vermiculite). Collect and dispose in accordance with applicable regulations. Avoid runoff to waterways and sewers.

7. Handling And Storage

Handling And Storage Precautions
Keep containers tightly closed. Store in a cool, dry, well-ventilated area. Do not handle or store near strong oxidants or strong acids. Use only with adequate ventilation.

8. Exposure Controls/Personal Protection

Engineering Controls
Use with adequate general and local exhaust ventilation. When used outdoors, stay well away from building air intakes or close and seal the intakes to prevent product from entering building.

Eye/Face Protection
Safety glasses with side shields or goggles recommended.

8. Exposure Controls/Personal Protection - Continued

Skin Protection
Use with chemical-protective gloves to prevent skin contact.

Respiratory Protection
This product is an encapsulated mixture which reduces the likelihood of exposure to hazardous particulates. Airborne exposures to hazardous dusts or mists may be generated by spraying, sanding or grinding.

The level of respiratory protection needed should be based on the evaluation of chemical exposures by a health or safety professional. If required, use a NIOSH-approved air purifying respirator with organic vapor cartridge and particulate filter or supplied air respirator.

Occupational Exposure Limits for individual ingredients (if available) are listed below.

Ingredient(s) - Exposure Limits
petroleum asphalt
OSHA PEL-TWA 5mg/m3
ACGIH TLV-TWA 0.5mg/m3 (Benzene soluble aerosol)
bentonite
ACGIH TLV-TWA 10 mg/m3 (total dust)
ACGIH TLV-TWA 3 mg/m3 (respirable dust)
OSHA PEL-TWA 15 mg/m3 (total dust)
OSHA PEL-TWA 5 mg/m3 (respirable dust)

9. Physical And Chemical Properties

Appearance
black liquid

Odor
faint petroleum solvent odor

Chemical Type: Mixture
Physical State: Liquid
Boiling Point: 212-220 °F 100-105 °C
Specific Gravity: 1.08
Percent Volatiles: <70
Vapor Pressure: 24@77ºF
Vapor Density: >1
pH Factor: not applicable
Solubility: dispersible
Evaporation Rate: <1

10. Stability And Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur

Incompatible Materials
Avoid contact with strong oxidizing agents and acids.

Hazardous Decomposition Products
Toxic and irritating gases, vapors or fumes, carbon monoxide (CO), carbon dioxide (CO2).

11. Toxicological Information

Chronic/Carcinogenicity

None of the ingredients present in this product, at concentrations equal to or greater than 0.1%, have been determined to be carcinogenic by IARC, NTP, OSHA, or ACGIH.

Miscellaneous Toxicological Information

Toxicological testing has not been conducted for this product overall. Available toxicological data for individual ingredients are summarized below.

12. Ecological Information

No specific information available.

13. Disposal Considerations

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

14. Transport Information

Ground Not Restricted

IMDG Not Restricted

IATA Not Restricted

15. Regulatory Information

U.S. Regulatory Information

Asphalt may contain detectable amounts of chemicals known to the State of California to cause cancer or reproductive harm.

Ingredient(s) - State Regulations

petroleum asphalt
California - Proposition 65
attapulgite
California - Proposition 65

Canadian Regulatory Information

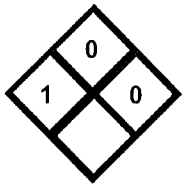
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR. WHMIS Classification: D2B - Toxic

WHMIS - Canada (Pictograms)

Henry COMPANY

DI900 - ASPHALT EMULSION BLACKTOP SEAL ER

NFPA



HMIS

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	

16. Other Information

Revision/Preparer Information

This MSDS Supersedes A Previous MSDS Dated: 02/11/2008

Disclaimer

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

H.M.I.S. RATING	
Health	1*
Flammability	2
Reactivity	0
Protective Equip.	C

Material Safety Data Sheet – OSHA 174

Material Safety Data Sheet
May be used to comply with OSHA's Hazard communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

US Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form) Form Approved
OMB No. 1218-0072

Fibered Roof and Foundation Coating

Product #: 19517, 19515, 19511

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name: FarmPaint.Com	**Emergency Telephone No.:** Chemtrec: 1-800-424-9300
Address: 700 Phillips Lane Lexington, KY 40504	**Telephone Number for Information:** 1-877-441-3276
	Date Prepared: November 11, 2010
Chemical Name: Mixture of asphalt, mineral spirits, filler, and cellulose fibers	

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS #	% By Weight	
Petroleum asphalt	8052-42-4	70 +/- 5	
Mineral spirits	64742-88-7	25 +/- 5	
Magnesium Carbonate	546-93-0	7 +/- 5	
Cellulose Fibers	9004-34-6	7 +/- 5	
Calcium Carbonate	1317-11-7	7 +/- 5	

Note: The above components and their percentagesare provided for health and safety purposes, ONLY. This document should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

SECTION III - HAZARD IDENTIFICATION

Emergency Overview:
Appearance and odor: Black, thin consistency asphalt coating with a mild hydrocarbon odor.
Warning Statements: COMBUSTIBLE, HARMFUL OR FATAL IF SWALLOWED, SKIN IRRITANT
Potential health effects
Likely Routes of Exposure:
Eye contact: Conjunctivitis, irritation, tearing burning.
Skin contact: Irritation or inflammation. Allergic skin reactions may occur. Dermatitis.
Inhalation: Irritation to mucous membranes and respiratory tract, nausea, dizziness, and headache.
Ingestion: Unlikely route of entry. 3-5 oz. may be fatal.
Refer to Section XI for toxicological information.

SECTION IV - FIRST AID MEASURES

IF IN EYES: Immediately flush with large amounts of potable water. Eyelids should be held away the eyeball to ensure through rinsing. Get medical attention if irritation persists.

IF ON SKIN: Remove contaminated clothing and wash with soap and water.

IF INHALED: Remove affected person from source of exposure. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, give oxygen. Get medical attention.

IF INGESTED: Do not induce vomiting- aspiration hazard. If spontaneous vomiting occurs, monitor for breathing difficulty. Get immediate medical attention. 3-5 ounces may be fatal.

SECTION V - FIRE FIGHTING MEASURES

Flash Point: 100º F Tag Closed Cup LEL – 0.9% UEL 6.7%

Hazardous products of combustions: H^2S , CO, CO^2 and SOX

Extinguishing Media: Foam CO^2, or dry chemical extinguishers. Use bunker gear and self contained breathing apparatus. There is a potential for containers to rupture violently in fires. Vapors from product may explode if ignited in a confined space.

Unusual Fire & Explosion Hazards: Do not direct water on substance. Water and foam may cause frothing. Treat as a fuel fire.

SECTION VI - ACCIDENTAL RELEASE MEASURES

If your facility or operation has an "oil or hazardous substance contingency play", activate the procedure. Take immediate steps to stop and contain the spill. Shut off all sources of ignation.

- Keep people away
- Eliminate sources of ignition
- Recover free product, add limestone, earth, or other suitable absorbents.
- Minimize skin contact and avoid breathing vapors
- Ventilate confined spaces
- Keep product out of sewers and waterways by diking or impounding
- Advise authorities if product has entered sewers, waterways, or extensive land areas
- Assure conformity with all applicable government regulations
- Dispose of in an approved vacility, see Section 13, Disposal Considerations.

SECTION VII - HANDLING AND STORAGE

HANDLING: Keep containers cool, dry and away from sources of ignition. Use this product with adequate ventilation. Material is COMBUSTIBLE. Material requires electrical grounding during material transfer prosess to prevent fire or explosion risk from static accumulation. And discharge. All electrical equipment in storage and handling areas should be installed per NFPA requirements.

STORAGE: Keep containers tightly closed when not in use. DO NOT STORE NEAR HEAT, SPARKS, FLAME, OTHER SOURCES OF IGNITION OF STRONG OXIDIZERS.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTIONS

Eye protection: Wear chemical splash goggles (ANSI Z87.1) or safety glasses when working with or transferring this product. DO NOT WEAR CONTACT LENSES IN THE PRESENCE OF THIS MATERIAL UNLESS SPLASH GOGGLES ARE WORN.

Skin protection: Use chemical resistant gloves, to avoid prolonged or repeated skin contact.

Respiratory protection: Use NIOSH or MSHA approved respiratory protective equipment when airborne exposure limits are exceeded.

Ventilation: Ventilation may be used to reduce airborne concentrations. If ventilation can not reduce airborne concentrations below acceptable, limits, appropriate respiratory protection should be used.

Airborne exposure limits:	**OSHA PEL**	**ACGIH TLV**
Mineral spirits	100 ppm	100 ppm

Note: All pigments, fillers, fibers, and extenders in this product are totally encapsulated and do not pose a respirable dust hazard during installation and use of this product.

Components referred to herin, may be regulated by specific Canadian provincial legislation. Please refer to exposure limits legislated for the province in which the substance will be used.

SECTION IX- PHYSICAL AND CHEMICAL PROPERTIES

Chemical Formula: Not applicable, mixture

Appearance: Black thick paste like mastic.

Odor: Mild hydrocarbon odor

pH: Not applicable

Melting Point: Not applicable

Density: Greater than 8.4

Solubility in Water: Less than 0.5%

NOTE: These physical data are typical values based on material testing, but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

SECTION X - STABILITY AND REACTIVITY

Stability: Stable

Materials to Avoid: Strong oxidizers, heat, spark or open flame.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen sulfide and sulfur Dioxide.

Hazardous Polymerization: Will not occur.

SECTION XI - TOXICOLOGICAL INFORMATION

Oral- rat LD50 (mg/kg): No data available.
Dermal- rabbit LD50 (mg/kg): No data available.
Eye Irritation- rabbit: No data available.
Skin Irritation- rabbit (24-hr exposure): No data available.

SECTION XII - ECOLOGICAL INFORMATION

This product may cause adverse environmental effects if used improperly or release to the environment through a spill. Employ best management practices to prevent this material from entering storm sewer systems, waterways or otherwise impacting plant and animal species.

SECTION XIII - DISPOSAL CONSIDERATIONS

Dispose of in an environmentally safe manner and in acdordance with governmental regulations. "Empty" containers retain residue (liquid and /or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. For work on tanks, refer to OSHA regulation ANSI Z49.1 and other governmental and industrial references pertaining to cleaning, repairing, welding or other contemplated operations.

This is "RCRA" regulated hazardous waste [D001 Ignitable per 40 CFR 260.21] and must be disposed in a permitted facility. Containers are hazardous waste if not emptied completely (less than 1 inch of residue).

The transportation, storage, treatment and disposal of this waste must be conducted in accordance with all applicable federal, state, and local regulations.

SECTION XIV - TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

US DOT: Non-bulk packages are exempt from DOT HM-181 shipping requirements.

CANADIAN TDG: Not determined.

SECTION XV - REGULATORY INFORMATION

TSCA INVENTORY: Not determined
DSL INVENTORY: Not determined
WHMIS CLASSIFICATION: Not determined
SARA HAZARD NOTIFICATION:
Hazardous Categories Under Title III Rules (40 CFR 370): Not applicable
Section 302 Extremely Hazardous Substances: Not applicable
Section 313 Toxic Chemical(s): Not applicable

CERCLA REPORTABLE QUANTITY: Component % by Wt.
Not applicable

CA Proposition 65 Warning: This product may contain chemicals known to the State of California to cause cancer, birth defects, and/or other reproductive harm.

Refer to Section XI for OSHA/HPA Hazardous Chemical(s) and Section XIII for RCRA classification.

SECTION XVI - OTHER INFORMATION

This material has been defined as a hazardous chemical under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

	Health	Fire	Reactivity	Additional Information
Suggested NFPA[1] Rating	1	2	0	
Suggested HMIS[1] Rating	1	2	0	

Reason for revision: N/A

Supersedes MSDS Dated: N/A

The information and recommendations contained herein are to the best of FarmPaint.com's knowledge and belief, accurate and reliable as of the date issued. FarmPaint.com does not warrant or guarantee their accuracy or reliability, and FarmPaint.com. shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the users consideration and examination, and it is the user's responsibility to satisy itself that they are suitable and complete for its particular use. It is also the user's responsibility to make certain that it is relying upon the most recent, updated, information and recommendations available from FarmPaint.com.

The Environmental Information included, as well as the Hazardous Material Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by FarmPaint.com in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with FarmPaint.com.'s interpretation of the available data.

For Other Product Information Contact:

FarmPaint.com
700 Phillips Lane
Lexington, KY 40504
1-877-441-3276

See HACI HAZCOM 2016 Part 1 for this item