


## 1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	<b>CLEARFIX UV COATING - CUV</b>
1.2	Chemical Name:	Isopropanol Solution
1.3	Synonyms:	CF3
1.4	Trade Names:	Clearfix UV Coating - CUV
1.5	Product Use:	Coating for application to acrylic or polymer aircraft windows.
1.6	Distributor's Name:	Clearfix Aerospace, Inc.
1.7	Distributor's Address:	3960 W Point Loma Blvd, Suite H369, San Diego, CA 92110 USA
1.8	Emergency Phone:	<b>+1 (619) 297-3678</b>
1.9	Business Phone / Fax:	+1 (619) 297-3678

## 2. HAZARDS IDENTIFICATION

2.1	Hazard Identification:	<p>This product is classified as a HAZARDOUS SUBSTANCE and as DANGEROUS GOODS according to the classification criteria of NOHSC and ADG Code (Australia).</p> <p><b>DANGER! HGHLY FLAMMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS.</b></p> <p><u>Classification:</u> Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2A; STOT SE 3;</p> <p><u>Hazard Statements</u> (H): H225 – Highly flammable liquid and vapor. H302 – Harmful if swallowed. H319 – Causes serious eye irritation. H336 – May cause drowsiness or dizziness.</p> <p><u>Precautionary Statements</u> (P): P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P241 – Use explosion-proof [electrical/ventilating/lighting] equipment. P242 – Use non-sparking tools. P243 - Take precautionary measures against static discharge. P261 – Avoid breathing dust/fume/vapors. P264 – Wash thoroughly after handling. P270 – Do not eat, drink or smoke when using this product. P271 – Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P312 – IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. P330 – Rinse mouth. P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 – Call a POISON CENTER or doctor/physician if you feel unwell. P305+P351+P338 – IF IN EYES - Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P337+P313 – If eye irritations persist: Get medical advice/attention. P370 – In case of fire: Use water fog, CO<sub>2</sub>, Halon (if permitted), dry chemical, foam to extinguish. P233 – Keep container tightly closed. P403+P235 – Store in a well-ventilated place. Keep cool. P405 – Store locked up. P501 – Dispose of contents/container to a licensed treatment, storage or disposal facility (TSDF).</p>	
-----	------------------------	---	--

## 3. COMPOSITION & INGREDIENT INFORMATION


CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m <sup>3</sup> )									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		ppm			ppm				
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
ISOPROPANOL	67-63-0	NT8050000	200-661-7	60-100	400	500	400	500	NF	400	500	2000	400 TWA	
	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336													
2-BUTOXYETHANOL	111-76-2	KJ8575000	203-905-0	≤ 10.0	50	75	5	50	NF	50	75	700		
	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; H302; H312, H315, H319, H332													
ACRYLIC POLYMER	NA	NA	NA	≤ 10.0	NA	NA	NF	NF	NF	NA	NA	NA		
PHENOLIC BENZOTRIAZOLE	127519-17-9	NA	407-000-3	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
	Aq. Chronic 2; H411													
BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDINYL) SEBACATE	41556-26-7	NA	NA	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA	(1) MFR	
	Skin Sens. 1; Aq. Acute 1; Aq. Chronic 1; H317, H400, H410													

## 4. FIRST AID MEASURES

4.1	First Aid:	<p><b>Ingestion:</b> If ingested, do not induce vomiting. If product has been swallowed, drink plenty of water or milk IMMEDIATELY. If the patient is vomiting, continue to offer water or milk. Never give water or milk to an unconscious person. Contact the nearest Poison Control Center or local emergency number. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed.</p> <p><b>Eyes:</b> Splashes are not likely; however, if product gets in the eyes, flush with copious amounts of lukewarm water for at least 15 minutes. If irritation occurs, contact a physician.</p> <p><b>Skin:</b> If irritation occurs and product is on the skin, rinse thoroughly with lukewarm water, followed by a thorough washing of the affected area with soap and water. If irritation, redness or swelling persists, contact a physician immediately.</p> <p><b>Inhalation:</b> Remove victim to fresh air at once.</p>
4.2	Effects of Exposure:	<p><b>Ingestion:</b> If product is swallowed, may cause nausea, vomiting and/or diarrhea and central nervous system depression.</p> <p><b>Eyes:</b> Irritating to the eyes. Symptoms of overexposure may include redness, itching, irritation and watering.</p> <p><b>Skin:</b> May be irritating to skin in some sensitive individuals, especially after prolonged and/or repeated contact.</p> <p><b>Inhalation:</b> Vapors of this product may be slightly irritating to the nose, throat and other tissues of the respiratory system. Symptoms of overexposure can include coughing, wheezing, nasal congestion, and difficulty breathing. Inhalation of vapors exceeding the levels listed in Section 2 (Composition and Ingredient Information) can cause central nervous system depression (e.g., drowsiness, dizziness, headaches, nausea).</p>
4.3	Symptoms of Overexposure:	Symptoms of skin overexposure in individuals may include redness, itching, and irritation of affected areas. Overexposure in eyes may cause redness, itching and watering. Irritation of the nose and throat, skin irritation, signs of nervous system depression (e.g., drowsiness, dizziness, loss of coordination and/or fatigue). Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness. Additional signs/symptoms may include generalized weakness and fatigue, skin pallor, changes in blood clotting time, internal bleeding, and/or hemoglobinemia.
4.4	Acute Health Effects:	Mild to moderate irritation to eyes and skin near affected areas. Additionally, high concentrations of vapors can cause drowsiness, dizziness, headaches and nausea.
4.5	Chronic Health Effects:	None known.
4.6	Target Organs:	Eyes, Skin, Respiratory System.
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, and respiratory system).

<b>HEALTH</b>	<b>1</b>
<b>FLAMMABILITY</b>	<b>3</b>
<b>PHYSICAL HAZARDS</b>	<b>0</b>
<b>PROTECTIVE EQUIPMENT</b>	<b>B</b>
<b>EYES</b>	<b>SKIN</b>

## 5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	<p><b>WARNING! FLAMMABLE LIQUID AND VAPOR.</b> Closed containers exposed to heat from fire may build pressure and explode. Vapors may travel long distances along the ground or floor to an ignition source and flash back. Keep away from heat, lit cigarettes, sparks &amp; open flame. Keep container closed. This product is a Class IB flammable liquid. When involved in a fire, this product will ignite readily and decompose to produce nitrogen and carbon oxides, carbon aldehydes and methane. Vapors of this product are heavier than air and may travel to a source of ignition and flash back to a leaking or open container. Fine mist or sprays may be flammable at temperatures below the flashpoint. If involved in a fire, this product may decompose at high temperatures to form toxic gases (e.g., CO, CO<sub>2</sub>, NO<sub>x</sub>).</p>	
5.2	Extinguishing Methods:	Water Fog, CO <sub>2</sub> , Halon (if permitted), Dry Chemical, Foam <b>HazChem Code:</b> 3[Y]E. <b>Hazard Identification Number:</b> 33	
5.3	Firefighting Procedures:	This product is a Class IB flammable liquid. When involved in a fire, this product will ignite readily and decompose to produce carbon oxides. Vapors of this product are heavier than air and may travel to a source of ignition and flash back to a leaking or open container. First responders should wear eye protection. Structural firefighters must wear SCBAs and full protective equipment. Use a water spray or fog to reduce or direct vapors. Water may not be effective in actually extinguishing a fire involving this product.	

## 6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	<p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment.</p> <p>For <u>small spills</u> (e.g., &lt; 1 gallon (3.8 L)) wear appropriate personal protective equipment (e.g., goggles, gloves). Maximize ventilation (open doors and windows) and secure all sources of ignition. Remove spilled material with absorbent material and place into appropriate closed container(s) for disposal. Dispose of properly in accordance with local, state and federal regulations. Wash all affected areas and outside of container with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse.</p> <p>For <u>large spills</u> (e.g., ≥ 1 gallon (3.8 L)), deny entry to all unprotected individuals. Dike and contain spill with inert material (e.g., sand or earth). Use ONLY non-sparking tools for recovery and cleanup. Transfer liquid to containers for recovery or disposal and solid diking material to separate containers for proper disposal. Remove contaminated clothing promptly and wash affected skin areas with soap and water. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.</p>
-----	---------	---

## 7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid prolonged contact with the product. Avoid breathing vapors of this product. Use in a well-ventilated location (e.g., local exhaust ventilation, fans). After use, wash hands and exposed skin with soap and water. Do not eat, drink or smoke while handling product.
7.2	Storage & Handling:	Keep this material away from heat, sparks and open flame. Open containers slowly on a stable surface. Keep container closed tightly when not in use. Empty container may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, other light sources, or sources of intense heat. Store away from incompatible materials (see Section 10).
7.3	Special Precautions:	Open containers slowly on a stable surface. Keep container tightly closed when not in use. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care.

## 8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Exposure Limits: ppm (mg/m <sup>3</sup> )	ACGIH		NOHSC			OSHA			OTHER	
		<b>CHEMICAL NAME(S)</b>									
		TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
		ISOPROPANOL									
2-BUTOXYETHANOL											
BIS(1,2,2,6,6-PENTAMETHYL-4-PIPERIDINYL) SEBACATE											
NA											
NA											
NF											
NF											
NF											
NA											
NA											
NA											
(1) MFR											
8.2	Ventilation & Engineering Controls:	When working with large quantities of product, provide adequate ventilation (e.g., local exhaust ventilation, fans). Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.									
8.3	Respiratory Protection:	No special respiratory protection is required under typical circumstances of use or handling. If necessary, use only respiratory protection authorized per U.S. OSHA's requirement in 29 CFR §1910.134, or applicable U.S. state regulations, or the appropriate standards of Canada, its provinces, E.C. member states, or Australia.									
8.4	Eye Protection:	Depending on the use of this product, splash or safety glasses may be worn. If necessary, refer to U.S. OSHA 29 CFR §1910.133, Canadian standards, or the European Standard EN166.									
8.5	Hand Protection:	If anticipated that prolonged & repeated skin contact will occur during use of this product, wear latex or rubber gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR §1910.138, the appropriate standards of Canada, of the E.C. member states.									
8.6	Body Protection:	No special body protection is required under typical circumstances of use and handling. If necessary, refer to appropriate standards of Canada, the E.C. member states, or U.S. OSHA.									

## 9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Appearance:	Clear, transparent coating
9.2	Odor:	Alcohol Odor
9.3	Odor Threshold:	NA
9.4	pH:	NA
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	28.3°C (83 °F)
9.7	Flashpoint:	12.5 °C (53 °F), TCC
9.8	Upper/Lower Flammability Limits:	LEL: 2.0%; UEL: 12.7%
9.9	Vapor Pressure:	44 mm @ 25 °C (77 °F)
9.10	Vapor Density:	2.1 (Air = 1.0)
9.11	Relative Density:	0.81
9.12	Solubility:	Moderately Soluble in Water
9.13	Partition Coefficient (log P <sub>ow</sub> ):	NA

## 9. PHYSICAL & CHEMICAL PROPERTIES – cont'd

9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	Evaporation Rate: 11 (Ether = 1.0); VOC: 753 g/L

## 10. STABILITY & REACTIVITY

10.1	Stability:	Stable under ambient conditions when stored properly (see section 7, Storage and Handling)
10.2	Hazardous Decomposition Products:	If exposed to extremely high temperatures, the products of thermal decomposition may include irritation vapors and nitrogen and carbon oxide gases (e.g. NO <sub>x</sub> , CO, CO <sub>2</sub> ).
10.3	Hazardous Polymerization:	May occur if exposed to extremely high temperatures.
10.4	Conditions to Avoid:	High temperatures and incompatible substances.
10.5	Incompatible Substances:	Strong oxidizers (e.g., peroxides, superoxides), strong acids (e.g., hydrochloric or muriatic acids), or strong bases (e.g., lye, potassium hydroxide, amines).

## 11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: YES	Absorption: YES	Ingestion: YES
11.2	Toxicity Data:	This product has NOT been tested on animals to obtain toxicology data. Toxicology data, found in scientific literature, is available for some of the components of the product and are presented below: <u>Butoxyethanol</u> : LD <sub>50</sub> (oral, rat) = 470 mg/kg; LC <sub>50</sub> (inh-4h, rat) = 450 ppm;		
11.3	Acute Toxicity:	See Section 4.4		
11.4	Chronic Toxicity:	See Section 4.6		
11.5	Suspected Carcinogen:	This product contains <u>Isopropyl Alcohol</u> and <u>Butoxyethanol</u> , which are not carcinogenic to humans, but are listed as Group 3 carcinogens by the IARC.		
11.6	Reproductive Toxicity:	This product is not reported to cause reproductive toxicity in humans.		
	Mutagenicity:	This product is not reported to cause mutagenic effects in humans.		
	Embryotoxicity:	This product is not reported to cause embryotoxic effects in humans.		
	Teratogenicity:	This product is not reported to cause teratogenic effects in humans.		
	Reproductive Toxicity:	This product is not reported to cause reproductive effects in humans.		
11.7	Irritancy of Product:	See Section 4.3		
11.8	Biological Exposure Indices:	<u>Butoxyethanol</u> : 200 mg/g (ACGIH)		
11.9	Physician Recommendations:	Treat symptomatically.		

## 12. ECOLOGICAL INFORMATION


12.1	Environmental Stability:	The components of this product will slowly degrade over time into a variety of organic compounds. Specific environmental data available for the components of this product are as follows: <u>Isopropyl Alcohol</u> : Log K <sub>OW</sub> = 0.05-0.14. Isopropyl alcohol occurs naturally; it is generated during microbial degradation of plant and animal wastes. When released on land or water, it is apt to volatilize and biodegrade. The estimated half-life in water is 5.4 days. Isopropyl alcohol is not expected to bioconcentrate.
12.2	Effects on Plants & Animals:	There are no specific data for this product.
12.3	Effects on Aquatic Life:	There are no specific data available for this product; however, very large releases of this product may be harmful or fatal to overexposed aquatic life.

## 13. DISPOSAL CONSIDERATIONS


13.1	Waste Disposal:	Waste disposal must be in accordance with appropriate Federal, state, and local regulations.
13.2	Special Considerations:	U.S. EPA Waste Number: D001 (characteristic - ignitable)

## 14. TRANSPORTATION INFORMATION

The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

14.1	49 CFR (GND):	CONSUMER COMMODITY, ORM-D (IP VOL ≤ 1.0 L) – until 12/31/2020; or UN1219, ISOPROPANOL SOLUTION, 3, II (LTD QTY, IP VOL ≤ 1.0 L)	
14.2	IATA (AIR):	ID8000, CONSUMER COMMODITY, 9 (IP VOL ≤ 0.5 L); or UN1219, ISOPROPANOL SOLUTION, 3, II (LTD QTY, IP VOL ≤ 0.5 L)	
14.3	IMDG (OCN):	UN1219, ISOPROPANOL SOLUTION, 3, II (LTD QTY, IP VOL ≤ 1.0 L)	
14.4	TDGR (Canadian GND):	UN1219, ISOPROPANOL SOLUTION, 3, II (LTD QTY, IP VOL ≤ 1.0 L)	
14.5	ADR/RID (EU):	UN1219, ISOPROPANOL SOLUTION, 3, II (LTD QTY, IP VOL ≤ 1.0 L)	
14.6	SCT (MEXICO):	UN1219, ISOPROPANOL EN SOLUCION, 3, II (CANTIDAD LIMITADA, IP VOL ≤ 1.0 L)	
14.7	ADGC (AUS):	UN1219, ISOPROPANOL SOLUTION, 3, II (LTD QTY, IP VOL ≤ 1.0 L)	

## 15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements:	This product contains <u>Isopropanol</u> , a substance subject to SARA Title III, section 313 reporting requirements.	
15.2	SARA Threshold Planning Quantity:	There are no specific Threshold Planning Quantities for the components of this product.	
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory.	
15.4	CERCLA Reportable Quantity (RQ):	NA	
15.5	Other Federal Requirements:	This product does not contain any substances identified as Hazardous Air Pollutants (HAPs).	
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDL. None of the components of this product are listed on the Priorities Substances List. WHMIS Class B2, D2B (Flammable Liquid, Other Toxic Effects)	
15.7	State Regulatory Information:	<u>Isopropanol</u> is found on the following state criteria lists: California Hazardous Substances List (CA), Massachusetts Hazardous Substances List (MA), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), Pennsylvania Right-to-Know List (PA), and Washington Permissible Exposures List (WA). <u>2-Butoxyethanol</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA, and WA. No other ingredients in this product, present in a concentration of 1.0% or greater, are listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), New York Hazardous Substances List (NY), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI).	
15.8	Other Requirements:	NA	

## 16. OTHER INFORMATION

16.1	Other Information:	<p><b>DANGER! HIGHLY FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS.</b> Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take precautionary measures against static discharge. Avoid breathing dust/fume/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF IN EYES - Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If eye irritations persist: Get medical advice/attention. In case of fire: Use water fog, CO<sub>2</sub>, Halon (if permitted), dry chemical, foam to extinguish. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. <b>KEEP OUT OF REACH OF CHILDREN.</b></p>	
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.	
16.3	Disclaimer:	<p>This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's &amp; Clearfix Aerospace's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.</p>	
16.4	Prepared for:	<p><b>Clearfix Aerospace, Inc.</b> 3960 W Point Loma Blvd Suite H369 San Diego, CA 92110 USA Tel: +1 (619) 297-3678 <a href="http://www.clearfixaerospace.com">http://www.clearfixaerospace.com</a></p>	
16.5	Prepared by:	<p><b>ShipMate, Inc.</b> P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 <a href="http://www.shipmate.com">http://www.shipmate.com</a></p>	



## DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a SDS. Some of these that are commonly used include the following:

### GENERAL INFORMATION:

<b>CAS No.</b>	Chemical Abstract Service Number
----------------	----------------------------------

### EXPOSURE LIMITS IN AIR:

<b>ACGIH</b>	American Conference on Governmental Industrial Hygienists
<b>TLV</b>	Threshold Limit Value
<b>OSHA</b>	U.S. Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Limit
<b>IDLH</b>	Immediately Dangerous to Life and Health

### FIRST AID MEASURES:

<b>CPR</b>	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.
------------	--

### HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

### HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard

<b>HEALTH</b>
<b>FLAMMABILITY</b>
<b>PHYSICAL HAZARDS</b>
<b>PERSONAL PROTECTION</b>

### PERSONAL PROTECTION RATINGS:

<b>A</b>		<b>G</b>	
<b>B</b>		<b>H</b>	
<b>C</b>		<b>I</b>	
<b>D</b>		<b>J</b>	
<b>E</b>		<b>K</b>	
<b>F</b>		<b>X</b>	Consult your supervisor or SOPs for special handling directions.

Safety Glasses	Splash Goggles	Face Shield & Protective Eyewear	Gloves
Boots	Synthetic Apron	Protective Clothing & Full Suit	Dust Respirator
Full Face Respirator	Dust & Vapor Half-Mask Respirator	Full Face Respirator	Airline Hood/Mask or SCBA

### OTHER STANDARD ABBREVIATIONS:

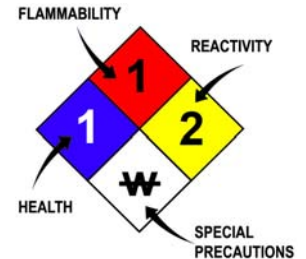
<b>NA</b>	Not Available
<b>NR</b>	No Results
<b>NE</b>	Not Established
<b>ND</b>	Not Determined
<b>ML</b>	Maximum Limit
<b>SCBA</b>	Self-Contained Breathing Apparatus
<b>Flam.</b>	Flammable
<b>Liq.</b>	Liquid
<b>Sol.</b>	Solid
<b>Tox.</b>	Toxicity
<b>Irrit.</b>	Irritation
<b>Sens.</b>	Sensitization
<b>Ox.</b>	Oxidizing
<b>Corr.</b>	Corrosion
<b>Repr.</b>	Reproductive (Harm)
<b>Asp.</b>	Aspiration
<b>Inh.</b>	Inhalation
<b>Dam.</b>	Damage
<b>STOT SE</b>	Specific Target Organ Toxicity – Single Exposure
<b>STOT RE</b>	Specific Target Organ Toxicity – Repeated Exposure

### NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:	
<b>Autoignition Temperature</b>	Minimum temperature required to initiate combustion in air with no other source of ignition
<b>LEL</b>	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
<b>UEL</b>	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source

### HAZARD RATINGS:

<b>0</b>	Minimal Hazard
<b>1</b>	Slight Hazard
<b>2</b>	Moderate Hazard
<b>3</b>	Severe Hazard
<b>4</b>	Extreme Hazard
<b>ACD</b>	Acidic
<b>ALK</b>	Alkaline
<b>COR</b>	Corrosive
<b>W</b>	Use No Water
<b>OX</b>	Oxidizer
<b>TREFOIL</b>	Radioactive



### TOXICOLOGICAL INFORMATION:

<b>LD<sub>50</sub></b>	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
<b>LC<sub>50</sub></b>	Lethal concentration (gases) which kills 50% of the exposed animal
<b>ppm</b>	Concentration expressed in parts of material per million parts
<b>TD<sub>01</sub></b>	Lowest dose to cause a symptom
<b>TCLo</b>	Lowest concentration to cause a symptom
<b>TD<sub>10</sub>, LD<sub>10</sub>, &amp; LD<sub>01</sub> or TC, TC<sub>01</sub>, LC<sub>10</sub>, &amp; LC<sub>01</sub></b>	Lowest dose (or concentration) to cause lethal or toxic effects
<b>IARC</b>	International Agency for Research on Cancer
<b>NTP</b>	National Toxicology Program
<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances
<b>BCF</b>	Bioconcentration Factor
<b>TL<sub>m</sub></b>	Median threshold limit
<b>log K<sub>ow</sub> or log K<sub>oc</sub></b>	Coefficient of Oil/Water Distribution

### REGULATORY INFORMATION:

<b>WHMIS</b>	Canadian Workplace Hazardous Material Information System
<b>DOT</b>	U.S. Department of Transportation
<b>TC</b>	Transport Canada
<b>EPA</b>	U.S. Environmental Protection Agency
<b>DSL</b>	Canadian Domestic Substance List
<b>NDSL</b>	Canadian Non-Domestic Substance List
<b>PSL</b>	Canadian Priority Substances List
<b>TSCA</b>	U.S. Toxic Substance Control Act
<b>EU</b>	European Union (European Union Directive 67/548/EEC)
<b>WGK</b>	Wassergefährdungsklassen (German Water Hazard Class)

### WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

Class A	Class B	Class C	Class D1	Class D2	Class D3	Class E	Class F
Compressed	Flammable	Oxidizing	Toxic	Irritation	Infectious	Corrosive	Reactive

### EC (67/548/EEC) INFORMATION:

C	E	F	N	O	T	Xi	Xn
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

### CLP/GHS (1272/2008/EC) PICTOGRAMS:

GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment