


1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	OPI BONDEX 2
1.2	Chemical Name:	Methacrylic Acid Solution
1.3	Synonyms:	NA
1.4	Trade Names:	NA
1.5	Product Use:	Professional Use Only
1.6	Distributor's Name:	OPI Products, Inc.
1.7	Distributor's Address:	13034 Saticoy Street, No. Hollywood, CA 91605 USA
1.8	Emergency Phone:	CHEMTREC: +1 (703) 527-3887 / +1 (800) 424-9300 (CCN 16377)
1.9	Business Phone / Fax:	+1 (818) 759-2400 / +1 (818) 759-5776

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: 1088 (2004)] and ADG Code (Australia).</p> <p>DANGER! HARMFUL IF SWALLOWED OR IN CONTACT WITH SKIN. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE DAMAGE.</p> <p><u>Classification:</u> Acute Tox. 4; Skin Irrit. 1A</p> <p><u>Hazard Statements (H):</u> H302 – Harmful if swallowed. H314 – Causes severe skin burns and eye damage.</p> <p><u>Precautionary Statements (P):</u> P260 – Do not breathe dusts or mists. P264 – Wash hands and exposed skin areas thoroughly with soap and warm water after handling. P280 - Wear protective gloves/ protective clothing/eye protection/face protection. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363 – Wash contaminated clothing before reuse. P310 – Immediately call a POISON CENTER or doctor/physician. P321 – Specific treatment – See Section 4 of this Safety Data Sheet. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P405 – Store Locked up. P501 - Dispose of contents/container to a licensed treatment, storage or disposal facility (TSDF).</p>	
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3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m ³)									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		ppm			ppm				
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
METHACRYLIC ACID	79-41-4	OZ2975000	201-204-4	≤ 75.0	20	NA	20	70	NF	20	NA	NA	20 NIOSH	
	Acute Tox. 4, Acute Tox. 4, Skin corr. 1A; H302, H312, H314													
ISOBUTYL METHACRYLATE	15454-74-7	NA	202-613-3	≤ 25.0	NA	NA	NF	NF	NF	NA	NA	NA	50 BUELER	
	Flam. Liq. 3; Eye Irrit. 2; STOT SE 3; Skin Irrit. 2; Skin Sens. 1; Aquatic Acute 1; H226, H319, H335, H315, H317, H400													
OLEIC ACID	112-80-1	RG2275000	204-007-1	≤ 1.0	NE	NE	NF	NF	NF	NE	NE	NE		
COPPER PCA	15454-74-7	NA	239-471-4	≤ 1.0	NE	NE	NF	NF	NF	NE	NE	NE		


4. FIRST AID MEASURES

4.1	First Aid:	<p><u>Ingestion:</u> DO NOT INDUCE VOMITING. the nearest Poison Control Center or local emergency telephone number for assistance and instructions. Seek immediate medical attention. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.</p> <p><u>Eyes:</u> If product gets in the eyes, flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete flushing. If the eyes or face become swollen during or following use, consult a physician or emergency room immediately.</p> <p><u>Skin:</u> Remove contaminated clothing and wash affected areas with soap and water. If discomfort persists and/or the skin reaction worsens, contact a physician immediately. Do not wear contaminated clothing until after it has been properly cleaned.</p> <p><u>Inhalation:</u> Remove victim to fresh air at once. Under extreme conditions, if breathing stops, perform artificial respiration. Seek immediate medical attention.</p>
4.2	Effects of Exposure:	<p><u>Ingestion:</u> Severe burns of mouth, throat and stomach. Possible symptoms include nausea, vomiting, abdominal pain. May cause damage to kidneys, resulting in blood in urine.</p> <p><u>Eyes:</u> Severe or permanent eye damage.</p> <p><u>Skin:</u> Severe irritation and possible burns.</p> <p><u>Inhalation:</u> If sprayed, severe irritation of respiratory tract and mucous membranes; coughing, difficulty breathing.</p>

4. FIRST AID MEASURES – cont'd

4.3	Symptoms of Overexposure:	<p>Ingestion: Nausea, vomiting, severe abdominal pain.</p> <p>Eyes: Redness, burning, irritation, and swelling around eyes</p> <p>Skin: Redness, burning, itching, rash, blistering of skin.</p> <p>Inhalation: Coughing, wheezing, swelling of throat, irritation in mucous membranes, difficulty breathing.</p>															
4.4	Acute Health Effects:	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if swallowed. Causes burns. May be harmful if absorbed through skin.															
4.5	Chronic Health Effects:	May damage the nervous system, kidney and/or liver.															
4.6	Target Organs:	Eyes, Skin, Lungs (Corrosive)															
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, and respiratory system) or impaired kidney function may be more susceptible to the effects of this substance.															
		<table border="1"> <tr> <td colspan="2">HEALTH</td> <td>3</td> </tr> <tr> <td colspan="2">FLAMMABILITY</td> <td>2</td> </tr> <tr> <td colspan="2">PHYSICAL HAZARDS</td> <td>2</td> </tr> <tr> <td colspan="2">PROTECTIVE EQUIPMENT</td> <td>H</td> </tr> <tr> <td>EYES</td> <td>SKIN</td> <td>LUNGS</td> </tr> </table>	HEALTH		3	FLAMMABILITY		2	PHYSICAL HAZARDS		2	PROTECTIVE EQUIPMENT		H	EYES	SKIN	LUNGS
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FLAMMABILITY		2															
PHYSICAL HAZARDS		2															
PROTECTIVE EQUIPMENT		H															
EYES	SKIN	LUNGS															

5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	Non-flammable. May react with metals to release hydrogen gas, which can form explosive mixtures with air.	
5.2	Extinguishing Methods:	Use fire-extinguishing media appropriate for surrounding materials.	
5.3	Firefighting Procedures:	As with any fire, firefighters should wear appropriate protective equipment including a MSHA/NIOSH approved or equivalent self-contained breathing apparatus (SCBA) and protective clothing. Fight fires as for surrounding materials. Hazardous decomposition products may be released. Thermal degradation may produce oxides of carbon, and/or nitrogen, hydrocarbons and/or derivatives. Fire should be fought from a safe distance. Keep containers cool until well after the fire is out. Use water spray to cool fire-exposed surfaces and to protect personal. Fight fire upwind. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway.	

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., < 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). 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>
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7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid prolonged contact with this material. Avoid breathing the vapors generated by this product. Use in a well-ventilated location (e.g., local exhaust ventilation, fans). Wash exposed skin thoroughly with plenty of soap & water after using this product. If necessary, use a moisturizer after washing. Do not eat, drink, or smoke while handling this product.
7.2	Storage & Handling:	Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans). Keep away from excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatible materials listed in Section 10. Do not store in damaged or unmarked containers or storage devices. Keep containers securely closed when not in use. Open slowly on a level, stable surface. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. As a precaution against exposure to the eyes, nose, throat and face, this product should not be stored higher than waist level. Keep away from children at all times!
7.3	Special Precautions:	Empty containers may retain hazardous product residues.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Exposure Limits: ppm (mg/m ³)	ACGIH		NOHSC			OSHA			OTHER	
		CHEMICAL NAME(S)	TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH	
		ETHACRYLIC ACID	20	NA	20	70	NF	20	NA	NA	20 NIOSH
8.2	Ventilation & Engineering Controls:	<p>ISOBUTYL METHACRYLATE</p> <p>NA NA NF NF NF NA NA NA NA 50 BUELER</p> <p>When working with large quantities of product, provide adequate ventilation (e.g., local exhaust ventilation, fans). Ensure that an eyewash station or washbasin is available in case of exposure to eyes.</p>									

8. EXPOSURE CONTROLS & PERSONAL PROTECTION – cont'd

8.3	Respiratory Protection:	No special respiratory protection is required under typical circumstances of use or handling. In instances where vapors or sprays of this product are generated, and respiratory protection is needed, use only protection authorized by 29 CFR §1910.134, applicable U.S. State regulations, or the Canadian CAS Standard Z94.4-93 and applicable standards of Canadian Provinces, EC member States, or Australia.	
8.4	Eye Protection:	Wear protective eyewear (e.g., safety glasses with side-shield) at all times when handling this product. Always use protective eyewear when cleaning spills or leaks.	
8.5	Hand Protection:	None required under normal conditions of use. However, may cause skin irritation in some sensitive individuals. When handling large quantities (e.g., ≥ 1 gallon), wear rubber or impervious plastic gloves.	
8.6	Body Protection:	No apron required when handling small quantities. When handling large quantities (e.g., ≥ 1 gallon), eye wash stations and deluge showers should be available. Upon completion of work activities involving large quantities of this product, wash any exposed areas thoroughly with soap and water.	

9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Appearance:	Colorless liquid
9.2	Odor:	Strong, repulsive, acrylic odor.
9.3	Odor Threshold:	NA
9.4	pH:	NA
9.5	Melting Point/Freezing Point:	16°C (60.8°F)
9.6	Initial Boiling Point/Boiling Range:	163 °C (325 °F)
9.7	Flashpoint:	77 °C (170.6 °F), TCC
9.8	Upper/Lower Flammability Limits:	8.1/1.6
9.9	Vapor Pressure:	NA
9.10	Vapor Density:	(air=1): 2.97
9.11	Relative Density:	1.015
9.12	Solubility:	Partially soluble in diethyl ether, acetone. Very slightly soluble in methanol, n-octanol.
9.13	Partition Coefficient (log P _{ow}):	NA
9.14	Autoignition Temperature:	365 °C (689 °F)
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	NA

10. STABILITY & REACTIVITY

10.1	Stability:	Relatively stable under ambient conditions when stored properly.
10.2	Hazardous Decomposition Products:	If exposed to <u>extremely high temperatures</u> , products of thermal decomposition may include irritating vapors and toxic gases (e.g., oxides of carbon & nitrogen).
10.3	Hazardous Polymerization:	May occur.
10.4	Conditions to Avoid:	Exposure or contact to extreme temperatures, incompatible chemicals, strong light sources, sparks, flame.
10.5	Incompatible Substances:	Strong oxidizers, peroxides, strong alkalis or acids.

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 toxicological data. There are toxicology data for the components of this product, which are found in the scientific literature. This data has not been presented in this document.		
11.3	Acute Toxicity:	See Section 4.4		
11.4	Chronic Toxicity:	See Section 4.5		
11.5	Suspected Carcinogen:	No		
11.6	Reproductive Toxicity:	This product is not reported to produce reproductive toxicity in humans.		
	Mutagenicity:	This product is not reported to produce mutagenic effects in humans. However, animal mutation data are available for the components of this product.		
	Embryotoxicity:	This product is not reported to produce embryotoxic effects in humans.		
	Teratogenicity:	This product is not reported to produce teratogenic effects in humans.		
	Reproductive Toxicity:	This product is not reported to produce reproductive effects in humans.		
11.7	Irritancy of Product:	See Section 4.3		
11.8	Biological Exposure Indices:	NE		
11.9	Physician Recommendations:	Treat symptomatically.		

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards

SDS Revision: 4.1

SDS Revision Date: 2/8/2016

12. ECOLOGICAL INFORMATION

12.1	Environmental Stability:	This product will slowly volatile from soil. Components of this product will slowly decompose into organic compounds.
12.2	Effects on Plants & Animals:	There are no specific data available for this product.
12.3	Effects on Aquatic Life:	There are no specific data available for this product. Releases of large volumes may be harmful or fatal to overexposed aquatic life. Aquatic toxicity data for components of this product are available, but are not presented in this MSDS.

13. DISPOSAL CONSIDERATIONS


13.1	Waste Disposal:	Dispose of in accordance with all Federal, state, and local regulations.
13.2	Special Considerations:	U.S. EPA Characteristic Waste: D002 (corrosive)

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 ($x \leq 0.5$ L) UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III ($x > 0.5$ L)
14.2	IATA (AIR):	UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III, LTD QTY ($x \leq 0.5$ L) UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III ($x > 0.5$ L)
14.3	IMDG (OCN):	UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III, LTD QTY ($x \leq 5.0$ L) UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III ($x > 5.0$ L)
14.4	TDGR (Canadian GND):	MARK PACKAGE "LIMITED QUANTITY" or "QUANTITÉ LIMITÉE" or "LTD QTY" or "QUANT LTÉE" ($x \leq 5.0$ L) UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III ($x > 5.0$ L)
14.5	ADR/RID (EU):	UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III, ADR, LTD QTY ($x \leq 5.0$ L)
14.6	SCT (MEXICO):	UN1760, LIQUIDOS CORROSIVOS, N.E.P. (ACIDO METICRILICO, METACRILATO DE ISOBUTIL), 8, III, CANTIDAD LIMITADA ($x \leq 5.0$ L)
14.7	ADGR (AUS):	UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III, LTD QTY ($x \leq 0.5$ L) UN1760, CORROSIVE LIQUIDS, N.O.S. (METHACRYLIC ACID, ISOBUTYL METHACRYLATE), 8, III ($x > 0.5$ L)



**15. REGULATORY INFORMATION**

15.1	SARA Reporting Requirements:	This product does not contain any substances 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 complies with the appropriate sections of the Food and Drug Administration's 21 CFR subchapter G (Cosmetics).
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/NDSL. None of the components of this product are listed on the Priorities Substances List. 
15.7	State Regulatory Information:	<u>Methacrylic Acid</u> can be found on the following state criteria list: Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Minnesota Hazardous Substances List (MN), Pennsylvania Right-to-Know List (PA), and Washington Permissible Exposures List (WA). <u>Isobutyl Methacrylate</u> can be found on the following state criteria list: PA, MA, and NJ. 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. REGULATORY INFORMATION – cont'd

15.8	Other Requirements:	<p>The primary components of this product are listed in Annex I of EU Directive 67/548/EEC:</p> <p><u>Methacrylic Acid</u>: Corrosive (C) <u>Risk Phrases (R)</u>: 21/22-35 – Harmful in contact with skin and if swallowed. Causes severe burns. <u>Safety Phrases (S)</u>: (1/2)-26-36/37/39-45 – Keep locked up and out of reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).</p> <p><u>Isobutyl Methacrylate</u>: Irritant (Xi), Environmental Danger (N) <u>Risk Phrases (R)</u>: 10-36/37/38-43-50 – Flammable. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact. Very toxic to aquatic organisms. <u>Safety Phrases (S)</u>: (2-)24-37-61 – Keep out of reach of children. Avoid contact with skin. Wear suitable gloves. Avoid release to the environment. Refer to special instructions/safety data sheet.</p>	
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16. OTHER INFORMATION

16.1	Other Information:	<p>DANGER! HARMFUL IF SWALLOWED OR IN CONTACT WITH SKIN. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE DAMAGE. Precisely follow directions and SDS (available through your supplier) for use. Avoid all skin contact. If redness or other signs of adverse reaction occur, discontinue use immediately. Use only in a well ventilated area. A ventilation system that expels vapors to the outdoors is recommended. Keep away from heat or flame. In case of emergency, contact your physician or local Poison Control Center immediately. HARMFUL IF SWALLOWED. KEEP LOCKED UP AND OUT OF REACH OF CHILDREN. FOR PROFESSIONAL USE ONLY.</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 & OPI'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>OPI Products, Inc. 13034 Saticoy Street No. Hollywood, CA 91605 USA Tel: +1 (818) 759-2400 Fax: +1 (818) 759-5776 http://www.opi.com</p>	
16.5	Prepared by:	<p>ShipMate, Inc. P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 http://www.shipmate.com</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:

CAS No.	Chemical Abstract Service Number
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EXPOSURE LIMITS IN AIR:

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

FIRST AID MEASURES:

CPR	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.
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HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

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

HEALTH
FLAMMABILITY
PHYSICAL HAZARDS
PERSONAL PROTECTION

PERSONAL PROTECTION RATINGS:

A		G	
B		H	
C		I	
D		J	
E		K	
F		X	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:

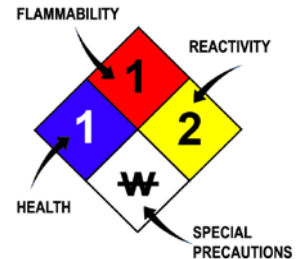
NA	Not Available
NR	No Results
NE	Not Established
ND	Not Determined
ML	Maximum Limit
SCBA	Self-Contained Breathing Apparatus
Flam.	Flammable
Liq.	Liquid
Sol.	Solid
Tox.	Toxicity
Irrit.	Irritation
Sens.	Sensitization
Ox.	Oxidizing
Corr.	Corrosion
Repr.	Reproductive (Harm)
Asp.	Aspiration
Inh.	Inhalation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

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

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

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



TOXICOLOGICAL INFORMATION:

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

REGULATORY INFORMATION:

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