



SAFETY DATA SHEET

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

SDS Revision: 2.0

SDS Revision Date: 2/22/21

Classification of the Hazardous Chemical (in accordance with WHS Regulation)

1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	ProOne® XPL-101 PENETRATING LUBRICANT
1.2	Chemical Name:	Mineral Oil with Additives
1.3	Synonyms:	NA
1.4	Trade Names:	ProOne® XPL-101 Penetrating Lubricant
1.5	Product Uses & Restrictions:	Lubricating Oil
1.6	Distributor's Name:	Pro-1-One Lubricant Australia PTY LTD
1.7	Distributor's Address:	6/165 Rookwood Rd, Yagoona NSW 2199, Sydney, Australia
1.8	Emergency Phone:	Poisons Information Centre: Australia: 13 11 26 New Zealand: 0800 764 766
1.9	Business Phone / Fax:	Tel: +61 1300 00 7761

2. HAZARDS IDENTIFICATION

2.1	Hazard Identification:	<p>This product is classified as a HAZARDOUS SUBSTANCE but not as DANGEROUS GOODS according to the classification criteria of NOHSC: 1088 (2004) and ADG Code (Australia). In the event of an exposure or medical inquiry involving this product, please contact a physician or local poison control center, who may seek advice from the U.S. manufacturer, and show them this SDS.</p> <p>DANGER! MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS. CAUSES DAMAGE TO CENTRAL NERVOUS SYSTEM THROUGH PROLONGED OR REPEATED EXPOSURE. CAUSES SKIN IRRITATION. CAUSES EYE IRRITATION.</p> <p><u>Classification:</u> Asp. Tox. 1, STOT RE 1</p> <p><u>Hazard Statements (H):</u> H304 – May be fatal if swallowed and enters airways. H315 – Causes skin irritation. H319 – Causes serious eye irritation. H372 – Causes damage to central nervous system (CNS) through prolonged or repeated exposure.</p> <p><u>Precautionary Statements (P):</u> P260 – Do not breathe fumes/mist/vapors/spray. P264 – Wash hands and exposed skin areas with soap and warm water thoroughly after handling. P270 – Do not eat, drink or smoke when using this product. P280 – Wear protective gloves/protective clothing/eye protection/ face protection. P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER/doctor. P331 – Do NOT induce vomiting. P308+P313 – IF exposed or concerned: Get medical advice/attention. P314 – Get medical advice/attention if you feel unwell. P332+P313 – If skin irritation occurs: Get medical advice/attention. P362+P364 – Take off contaminated clothing and wash it before reuse. P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P337+P313 – If eye irritation persists: Get medical advice/attention. P405 – Store locked up. P501 – Dispose of contents/container to licenses treatment, storage and 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				
					TLV	STEL	ppm	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH	
DISTILLATES (PETROLEUM), HYDROTREATED SPENT*	64742-58-1	NA	265-156-6	40-70	(5)	(10)	(5)	NA	NA	NA	(5)	NA	NA	OIL MIST
SYNTHETIC FLUIDS & POLYMERS	NA	NA	NA	5-15	NA	NA	NA	NA	NA	NA	NA	NA	NA	
ODORLESS MINERAL SPIRITS**	8052-41-3	WJ8925000	232-489-3	5-10	100	NA	NF	790	NF	500	NA	20000	(350) NIOSH	
ProOne® PROPRIETARY ADDITIVES	NA	NA	NA	5-10	NA	NA	NF	NF	NF	NA	NA	NA		

* contains ≤ 3.0% DMSO (DIMETHYLSULFOXIDE) per IP 346. ** contains ≤ 0.1% BENZENE.

4. FIRST AID MEASURES

4.1	First Aid:	<p><u>Ingestion:</u> DO NOT INDUCE VOMITING. Contact ChemTrec +1 (800) 424-9300 or 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>
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Classification of the Hazardous Chemical (in accordance with WHS Regulation)

4. FIRST AID MEASURES – cont'd

4.2	Effects of Exposure:	<p><u>Ingestion:</u> If product is swallowed, may cause gastrointestinal disturbance.</p> <p><u>Eyes:</u> Exposure to mists/fumes/vapors/spray may cause eye irritation. Symptoms of overexposure may include redness, itching, irritation and watering.</p> <p><u>Skin:</u> May be irritating to skin. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some sensitive individuals.</p> <p><u>Inhalation:</u> Coughing, wheezing, shortness of breath, impaired pulmonary function. Irritation or soreness in throat, nose and respiratory tract. Drowsiness, dizziness, headaches and nausea.</p>																
4.3	Symptoms of Overexposure:	<p><u>Ingestion:</u> If product is swallowed, may cause gastrointestinal disturbance.</p> <p><u>Eyes:</u> Exposure to mists/fumes/vapors/spray may cause eye irritation. Symptoms of overexposure may include redness, itching, irritation and watering.</p> <p><u>Skin:</u> May be irritating to skin. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some sensitive individuals.</p> <p><u>Inhalation:</u> Coughing, wheezing, shortness of breath, impaired pulmonary function. Irritation or soreness in throat, nose and respiratory tract. Additionally, high concentrations of vapors can cause drowsiness, dizziness, headaches and nausea.</p>																
4.4	Acute Health Effects:	Non-irritating when used as directed. Moderate irritation to eyes and skin near affected areas. Additionally, high concentrations of fumes/vapors can cause coughing, wheezing, shortness of breath, impaired pulmonary function. Irritation or soreness in throat, nose and respiratory tract.																
4.5	Chronic Health Effects:	Contains a petroleum-based mineral oil. Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects.																
4.6	Target Organs:	Eyes, Skin, Respiratory System, Central Nervous System (CNS)																
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, CNS) may be more susceptible to the effects of this substance.	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2" style="background-color: #0000FF; color: white;">HEALTH</td> <td style="background-color: #0000FF; color: white;">1</td> </tr> <tr> <td colspan="2" style="background-color: #FF0000; color: white;">FLAMMABILITY</td> <td style="background-color: #FF0000; color: white;">1</td> </tr> <tr> <td colspan="2" style="background-color: #FFA500; color: white;">PHYSICAL HAZARDS</td> <td style="background-color: #FFA500; color: white;">0</td> </tr> <tr> <td colspan="2" style="background-color: #000000; color: white;">PROTECTIVE EQUIPMENT</td> <td style="background-color: #000000; color: white;">B</td> </tr> <tr> <td style="background-color: #000000; color: white;">EYES</td> <td style="background-color: #000000; color: white;">SKIN</td> <td></td> </tr> </table>	HEALTH		1	FLAMMABILITY		1	PHYSICAL HAZARDS		0	PROTECTIVE EQUIPMENT		B	EYES	SKIN	
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FLAMMABILITY		1																
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EYES	SKIN																	

5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	<p>This material can burn but will not readily ignite. This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, heated vapor can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point. Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and trace oxides of sulfur, phosphorus and nitrogen. Also, depending upon the conditions of use, low concentrations of hydrogen sulfide can be released.</p>	
5.2	Extinguishing Methods:	Dry chemical, foam, carbon dioxide, and water fog.	
5.3	Firefighting Procedures:	<p>Keep containers cool until well after the fire is out. Use water spray to cool fire-exposed surfaces and to protect personal. Avoid spraying water directly into storage containers because of danger of boil over. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway. Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.</p>	

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. 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). 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>
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7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Use normal hygiene practices. Avoid breathing vapors. Avoid direct skin contact. Wash hands thoroughly after using this product and before eating, drinking, or smoking.
7.2	Storage & Handling:	Use and store in a cool, dry, well-ventilated area. Keep away from excessive heat, open flames, sparks, and other possible sources of ignition. Do not store in unmarked containers or storage devices. Recommended maximum shelf life: 36 months.
7.3	Special Precautions:	Empty containers may contain product residue. Do not pressurize, cut, heat or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning. Keep container tightly closed when not in use. Do not store at temperatures above 120 °F (49 °C). Store away from strong oxidizers.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Exposure Limits: ppm (mg/m ³)	CHEMICAL NAME(S)	ACGIH		NOHSC			OSHA			OTHER	
			TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
		DISTILLATES (PETROLEUM), HYDROTREATED SPENT	5	NF	NF	NF	NF	5	NF	NF	MIST	
		ODORLESS MINERAL SPIRITS	100	NA	NF	790	NF	500	NA	20000	(350) NIOSH	
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. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist pre-filter should be used. Protection factors vary depending upon the type of respirator used.										
8.4	Eye Protection:	Safety glasses with side shields must be used when handling or using this product. A protective face shield is also recommended. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.										
8.5	Hand Protection:	Use gloves constructed of chemical resistant materials such as neoprene or heavy nitrile rubber if frequent or prolonged contact is expected. 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:	Avoid prolonged and/or repeated skin contact. Use clean and impervious protective clothing (e.g., neoprene or Tyvek®) if splashing or spraying conditions are present. Protective clothing should include long-sleeves, apron, boots and additional facial protection. Remove contaminated clothing. Launder contaminated clothing before reusing. Contaminated leather goods should be removed promptly and discarded. 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:	This product is a straw/amber oily colored liquid
9.2	Odor:	Mild petroleum odor
9.3	Odor Threshold:	NA
9.4	pH:	NA
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	NA
9.7	Flashpoint:	100 °C (212 °F)
9.8	Upper/Lower Flammability Limits:	NA
9.9	Vapor Pressure:	Negligible
9.10	Vapor Density:	NA
9.11	Relative Density:	0.86-0.88
9.12	Solubility:	Insoluble
9.13	Partition Coefficient (log P _{ow}):	NA
9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	Evaporation Rate: negligible (n-BuAc=1); VOC: negligible



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10. STABILITY & REACTIVITY

10.1	Stability:	Stable, when used as intended.
10.2	Hazardous Decomposition Products:	Thermal decomposition products include oxides of carbon, oxides of nitrogen, sulfur and molybdenum.
10.3	Hazardous Polymerization:	Will not occur.
10.4	Conditions to Avoid:	Heat, sparks, open flame and all possible ignition sources.
10.5	Incompatible Substances:	Avoid contact with strong oxidizing agents, strong reducing agents, strong acids and strong alkalis.

11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: NO	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 is presented below: Distillates (Petroleum), Hydrotreated Spent: LD ₅₀ (oral, rat) > 5000 mg/kg; LD ₅₀ (dermal, rabbit) > 2000 mg/kg. Odorless Mineral Spirits: LD ₅₀ (oral, rat): 5,000 mg/kg		
11.3	Acute Toxicity:	Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipid granuloma formation and lipid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects.		
11.4	Chronic Toxicity:	In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.		
11.5	Suspected Carcinogen:	This product contains a severely hydrotreated mineral oil with less than 3 % DMSO extract as measured by IP 346 and is not considered a carcinogen.		
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.		
	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.		

12. ECOLOGICAL INFORMATION

12.1	Environmental Stability:	This product is believed to be stable. Engineering controls should be put in place to prevent release to the environment.
12.2	Effects on Plants & Animals:	If applied to leaves, this product may kill grasses and small plants by interfering with transpiration and respiration. This product is not toxic to fish but may coat gill structures resulting in suffocation if spilled in shallow, running water. Product may be moderately toxic to amphibians by preventing dermal respiration. This product may cause gastrointestinal distress in birds and mammals through ingestion during pelage grooming.
12.3	Effects on Aquatic Life:	There are no specific data available for this product.

13. DISPOSAL CONSIDERATIONS

13.1	Waste Disposal:	Dispose of in accordance with federal, state, provincial and local hazardous waste laws.
13.2	Special Considerations:	If the material is unsuitable for recycling or reclamation, enclosed-controlled incineration is recommended unless otherwise prohibited by local ordinance.

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):	NOT REGULATED
14.2	IATA (AIR):	NOT REGULATED
14.3	IMDG (OCN):	NOT REGULATED
14.4	TDGR (Canadian GND):	NOT REGULATED
14.5	ADR/RID (EU):	NOT REGULATED
14.6	SCT (MEXICO):	NOT REGULATED
14.7	ADGR (AUS):	NOT REGULATED

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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 material does not contain any hazardous air pollutants. None of the components in this product are listed as priority pollutants under the CWA. None of the components in this product are listed as toxic pollutants under the CWA.
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the CPR and the SDS 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. WHMIS D2B (Other Toxic Effects)
15.7	State Regulatory Information:	<u>Odorless Mineral Spirits</u> is found on the following state criteria list(s): Florida Toxic Substances List (FL), 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). 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:	The primary components of this product are not listed in Annex I of EU Directive 67/548/EEC: <u>Distillates (Petroleum), Hydrotreated Spent</u> : Toxic (T). <u>Risk Phrases (R)</u> : 45 – May cause cancer. <u>Safety Phrases (S)</u> : 53-45 – Avoid exposure – obtain special instructions before use. In case of accident or if you feel unwell seek medical advice immediately (show the label where possible). <u>Odorless Mineral Spirits</u> : Flammable (F). <u>Risk Phrases (R)</u> : 12-65 – Highly flammable. Harmful: may cause lung damage if swallowed. <u>Safety Phrases (S)</u> : 53-45 – Avoid exposure – obtain special instructions before use. In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).



16. OTHER INFORMATION

16.1	Other Information:	<p>DANGER! MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS. CAUSES DAMAGE TO CENTRAL NERVOUS SYSTEM THROUGH PROLONGED OR REPEATED EXPOSURE. CAUSES SKIN IRRITATION. CAUSES EYE IRRITATION. Do not breathe fumes/mist/vapors/spray. Wash hands and exposed skin areas with soap and warm water thoroughly after handling. Do not eat, drink or smoke when using this product. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. 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 advice/attention. Store locked up. KEEP OUT OF REACH OF CHILDREN.</p>
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.
16.3	Disclaimer:	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 & ProOne, Inc.'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.
16.4	Prepared for:	<p>Pro-1-One Lubricant Australia PTY LTD 6/165 Rookwood Rd, Yagoona NSW 2199, Sydney, Australia Tel: +61 1300 00 7761 e-mail: info@pro-one.net.au http://www.pro-one.net.au</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>



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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
EXPOSURE LIMITS IN AIR:	
ACGIH	American Conference on Governmental Industrial Hygienists
C	Ceiling Limit
ES	Exposure Standard (Australia)
IDLH	Immediately Dangerous to Life and Health
OSHA	U.S. Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
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.

HMIS-III HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard	HEALTH FLAMMABILITY PHYSICAL HAZARDS PERSONAL PROTECTION
1	Slight Hazard	
2	Moderate Hazard	
3	Severe Hazard	
4	Extreme Hazard	

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:

ML	Maximum Limit
mg/m3	milligrams per cubic meter
NA	Not Available
ND	Not Determined
NE	Not Established
NF	Not Found
NR	No Results
ppm	parts per million
SCBA	Self-Contained Breathing Apparatus

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:

LD₅₀	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
LC₅₀	Lethal concentration (gases) which kills 50% of the exposed animal
ppm	Concentration expressed in parts of material per million parts
TD₀₁	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD₀₁, LD₀₁, & LD₀₂ or TC, TC₀₁, LC₀₁, & LC₀₂	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
NOHSC	National Occupational Health and Safety Commission (Australia)
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)
HMIS-III	National Paint & Coatings Association Hazardous Materials Identification System

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