

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



SDS Revision: 1.0

SDS Revision Date: 8/10/2017

## 1. PRODUCT &amp; COMPANY IDENTIFICATION

1.1	Product Name:	OPI INFINITE SHINE BRIGHTENING PRIMER
1.2	Chemical Name:	NA
1.3	Synonyms:	NA
1.4	Trade Names:	IST15
1.5	Product Use:	Professional or Sundry 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:	<b>CHEMTREC: +1 (703) 527-3887 / +1 (800) 424-9300 (CCN 16377)</b>
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 (1999) and ADG Code (Australia).</p> <p><b>WARNING! FLAMMABLE LIQUID AND VAPOR. CAUSES SERIOUS EYE IRRITATION. CAUSES MILD SKIN IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS</b></p> <p>Classification: Flam. Liq. 3; Eye Irrit. 2A; Skin Irrit. 3; STOT RE 3</p>	
2.2	Label Elements:	<p><b>Hazard Statements (H):</b> H226 – Flammable liquid and vapor. H319 – Causes serious eye irritation. H316 – Causes mild skin irritation. H336 – May cause drowsiness or dizziness.</p> <p><b>Precautionary Statements (P):</b> P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 – Keep container tightly closed. P261 – P261 – Avoid breathing dust/fume/vapors. P271 – Use only outdoors or in a well-ventilated area. P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P370+P378 – In case of fire: Use CO<sub>2</sub>, Halon (if permitted), Dry Chemical, Foam, as authorized. P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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 irritations persist: Get medical advice. Attention. P332+P313 – If skin irritation occurs: Get medical advice attention. P403+P235 – Store in a well-ventilated place. Keep cool. P501 – Dispose of contents/container to a licensed treatment, storage or disposal facility (TSDf).</p>	 
2.3	Other Warnings:	<b>KEEP OUT REACH OF CHILDREN.</b> Avoid skin contact due to sensitizing potential.	

## 3. COMPOSITION &amp; 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		
BUTYL ACETATE	123-86-4	AF7350000	204-658-1	30-50	150	200	150	200	NF	200	200	1700	100 NIOSH	
	Flam. Liq. 3; STOT SE 3; H226, H336													
ETHYL ACETATE	141-78-6	AH5425000	205-500-4	25-40	400	400	200	400	NF	NA	NA	2000	400 TWA	
	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336													
POLYVINYL BUTYRAL	63148-65-2	TR49550000	NA	10-20	NA	NA	NF	NF	NF	NA	NA	NA		
TOSYLAMIDE/ EPOXY RESIN	25035-71-6	QW0970000	200-001-8	5-10	(10)	NE	NF	NF	NF	(10)	NE	NE		
ACETYL TRIBUTYL CITRATE	77-90-7	NA	201-067-0	1-5	NA	NA	NF	NF	NF	NA	NA	NA		
	Flam. Gas 1; Muta. 1B; Carc. 1B; H220, H340, H350													
SILICA	7631-86-9	VV7310000	231-545-4	1-5	NA	NA	NF	NF	NF	NA	NA	3000	RESP FRAC	
BUTYL ALCOHOL	71-36-3	EO1400000	200-751-6	0.1-1	NA	50	50	152	50	100	NA	1400		
	Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; H226, H302, H315, H318, H335, H336													
BENZOPHENONE-1	131-56-6	DJ0700000	205-029-4	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; H315, H319, H335													
CAPRYLIC/CAPRIC TRIGLYCERIDE	65381-09-1	NA	265-724-3	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77891 (TITANIUM DIOXIDE)	13463-67-7	XR2275000	236-675-5	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
PROPYLENE GLYCOL	57-55-6	TY200000	200-338-0	0.1-1	NA	NA	474	NF	NF	NA	NA	NA		
	Skin Irrit. 3; Eye Irrit. 2; H316, H320													
MICA	12001-26-2	VV8760000	310-127-6	0-0.1	3	NA	NF	2.5	NF	20	NA	1500	RESP FRAC	
HELIANTHUS ANNUUS (SUNFLOWER) SEED OIL	84776-03-4	NA	232-273-9	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA		
WATER (AQUA/EAU)	7732-18-5	ZC0110000	231-191-2	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77742 (MANGANESE VIOLET)	10101-66-3	NA	233-257-4	0-1	NA	NA	NF	NF	NF	NA	NA	NA		

O.P.I		SAFETY DATA SHEET										Page 2 of 7 SDS-376	
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3. COMPOSITION & INGREDIENT INFORMATION													
CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m³)								OTHER
					ACGIH		NOHSC			OSHA			
					ppm		ppm			ppm			
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH	
CITRUS LIMON (LEMON) FRUIT EXTRACT	84929-31-7	NA	284-515-8	0.0-0.1	NA	NA	NF	NF	NF	NA	NA	NA	
Flam. Liq. 3, Asp. Tox. 1, Skin Irrit. 2, Skin Sens. 1, Aquatic Acute 1, Aquatic Chronic 1; H226, H304, H315, H317, H400; H410													
TIN OXIDE	18282-10-5	XQ4000000	242-159-0	0-1	NA	NA	NF	NF	NF	NA	NA	NA	
BAMBUSA VULGARIS EXTRACT	91771-33-4	NA	294-923-8	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA	
NELUMBO NUCIFERA FLOWER EXTRACT	85085-51-4	NA	285-379-2	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA	
IRON OXIDES (CI 77491, CI 77492, CI 77499)	1332-37-2	NA	NA	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA	
TOCOPHEROL	54-28-4	NA	200-201-5	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA	
Aquatic Chronic 4; H413													
TILIA PLATYPHYLLOS EXTRACT	91770-16-0	NA	294-800-9	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA	
HOYA LUCNOSA FLOWER EXTRACT	NA	NA	NA	0-0.1	NA	NA	NF	NF	NF	NA	NA	NA	
4. FIRST AID MEASURES													
4.1	First Aid:	<p><u>Ingestion:</u> 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><u>Eyes:</u> 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><u>Skin:</u> 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><u>Inhalation:</u> Remove victim to fresh air.</p>											
4.2	Effects of Exposure:	<p><u>Ingestion:</u> If product is swallowed, may cause nausea, vomiting and/or diarrhea and central nervous system depression.</p> <p><u>Eyes:</u> Irritating to the eyes. Symptoms of overexposure may include redness, itching, irritation and watering.</p> <p><u>Skin:</u> May be irritating to skin in some sensitive individuals, especially after prolonged and/or repeated contact.</p> <p><u>Inhalation:</u> 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 3 (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.											
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 and respiratory system.											
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing skin, eye and respiratory disorders.						HEALTH			1		
								FLAMMABILITY			3		
								PHYSICAL HAZARDS			0		
								PROTECTIVE EQUIPMENT			B		
								EYES		SKIN			

5.1	Fire & Explosion Hazards:	<b>DANGER! HIGHLY FLAMMABLE LIQUID AND VAPOR!</b> Keep away from heat, lit cigarettes, sparks & open flame. Keep container closed.
5.2	Extinguishing Methods:	CO <sub>2</sub> , Halon (if permitted), Dry Chemical, Foam, as authorized.
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.





6.1	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). 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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7.1	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.

[illegible]

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**9. PHYSICAL & CHEMICAL PROPERTIES**

9.1	Appearance:	Clear light pink liquid
9.2	Odor:	Slight
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:	- 4 °C (24.8 °F) estimated
9.8	Upper/Lower Flammability Limits:	NA
9.9	Vapor Pressure:	NA
9.10	Vapor Density:	NA
9.11	Relative Density:	NA
9.12	Solubility:	NA
9.13	Partition Coefficient (log P <sub>ow</sub> ):	NA
9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	NA

**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 irritating vapors and carbon oxide gases (e.g., CO, CO <sub>2</sub> ).
10.3	Hazardous Polymerization:	May occur, if exposed to extremely high temperatures.
10.4	Conditions to Avoid:	Exposure or contact to extreme temperatures, incompatible chemicals, strong light sources, sparks, flame.
10.5	Incompatible Substances:	This product is incompatible with strong oxidizers (e.g., peroxides, superoxides), strong acids (e.g., hydrochloric or muriatic acids), or strong bases (e.g., lye, potassium hydroxide).

**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: Ethyl Acetate: LD <sub>50</sub> (oral, rat) = 5,620 mg/kg; LD <sub>50</sub> (oral, mouse) = 4,100 mg/kg; LC <sub>50</sub> (inh-6h, rat) = 16,000 ppm		
11.3	Acute Toxicity:	See Section 4.4		
11.4	Chronic Toxicity:	See Section 4.5		
11.5	Suspected Carcinogen:	This product contains <u>Ethyl Acetate</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 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 4.2		
11.8	Biological Exposure Indices:	NE		
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>Ethyl Acetate</u> : K <sub>oc</sub> = 0.73. Water solubility: 64,000 mg/l. Bioconcentration Factor = 4-14. Bioconcentration is not anticipated to be significant. This compound can be removed from contaminated environments from volatilization, and biodegradation. This compound's half-life in water is 6.1 hours. <u>Butyl Acetate</u> : K <sub>oc</sub> = 1.82. Water solubility: 120 parts H <sub>2</sub> O at 25°C (77°F). Bioconcentration Factor = 4-14. Bioconcentration is not anticipated to be significant. This compound can be removed from contaminated environments from volatilization, and biodegradation. This compound's half-life in water is 6.1 hours.
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.

**13. DISPOSAL CONSIDERATIONS**

13.1	Waste Disposal:	Dispose of in accordance with Federal, state and local regulations.
13.2	Special Considerations:	NA

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## 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 CTDR.

14.1	49 CFR (GND):	UN1263, PAINT, 3, II (LTD QTY, IP $\leq 1.0$ L) or CONSUMER COMMODITY, ORM-D – until 01/01/2021	
14.2	IATA (AIR):	ID8000, CONSUMER COMMODITY, 9 (IP VOL $\leq 0.5$ L) UN1263, PAINT, 3, II (LTD QTY, IP $\leq 1.0$ L)	
14.3	IMDG (OCN):	UN1263, PAINT, 3, II (LTD QTY, IP VOL $\leq 1.0$ L)	
14.4	TDGR (Canadian GND):	UN1263, PAINT, 3, II (LTD QTY, IP VOL $\leq 1.0$ L); or "LIMITED QUANTITY" or "QUANTITÉ LIMITÉE" or "LTD QTY" or "QUANT LTÉE" ( $\leq 1.0$ L)	
14.5	ADR/RID (EU):	UN1263, PAINT, 3, II (LTD QTY, IP VOL $\leq 1.0$ L)	
14.6	SCT (MEXICO):	UN1263, PINTURA, 3, II (CANTIDAD LIMITADA, IP VOL $\leq 1.0$ L)	
14.7	ADGR (AUS):	UN1263, PAINT, 3, II (LTD QTY, IP VOL $\leq 1.0$ L)	
14.8	Other:	This product may also be shipped as an Excepted Quantity (IP VOL $\leq 30$ ml, PKG $\leq 500$ ml)	

## 15. REGULATORY INFORMATION



15.1	SARA Reporting Requirements:	This product contains Ethyl Acetate, a substance that is subject to SARA Title III, Section 304 reporting.	
15.2	SARA TPQ:	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:	Butyl Acetate: 2,270 kg (5,000 lbs); Ethyl Acetate: 2,270 kg (5,000 lbs)	
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 Safety Data Sheet 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 B2, D2B (Flammable Liquid, Other Toxic Effects)	
15.7	State Regulatory Information:	<p>Butyl Acetate is found on the following state criteria lists: California OSHA Hazardous Substances List (CA), Delaware Air Quality Management List (DE), Massachusetts Hazardous Substances List (MA), New Jersey Right-to-Know List (NJ), New York List of Hazardous Substances (NY), Pennsylvania Right-to-Know List (PA), and Washington Permissible Exposures List for Air Contaminants (WA), Wisconsin Hazardous Substances List (WI).</p> <p>Ethyl Acetate is found on the following state criteria lists: CA, DE, MA, MN, NJ, NY, PA, and WA.</p> <p>None of the 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).</p>	
15.8	Other Requirements:	NA	

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## 16. OTHER INFORMATION

16.1	Other Information:	<b>FLAMMABLE LIQUID AND VAPOR. CAUSES SERIOUS EYE IRRITATION. CAUSES MILD SKIN IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS.</b> Use only as directed. Discontinue use if irritation develops. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Avoid breathing dust/fume/vapors. Use only outdoors or in a well-ventilated area. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. In case of fire: Use CO <sub>2</sub> , Halon (if permitted), Dry Chemical, Foam, as authorized. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritations persist: Get medical advice. Attention. If skin irritation occurs: Get medical advice attention. Store in a well-ventilated place. Keep cool. <b>KEEP OUT OF REACH OF CHILDREN.</b>	
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 & 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.	
16.4	Prepared for:	<b>OPI Products, Inc.</b> 13034 Saticoy Street No. Hollywood, CA 91605 USA Tel: +1 (818) 759-2400 Fax: +1 (818) 759-5776 <a href="http://www.opi.com">http://www.opi.com</a>	
16.5	Prepared by:	<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>	

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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:

<b>CAS No.</b>	Chemical Abstract Service Number
<b>RTECS No.</b>	Registry of Toxic Effects of Chemical Substances Number
<b>EINECS No.</b>	European Inventory of Existing Commercial Chemical Substances Number

## EXPOSURE LIMITS IN AIR:

<b>ACGIH</b>	American Conference on Governmental Industrial Hygienists
<b>IDLH</b>	Immediately Dangerous to Life and Health
<b>NOHSC</b>	National Occupational Health and Safety Commission (Australia)
<b>OSHA</b>	U.S. Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Limit
<b>STEL</b>	Short Term Exposure Limit
<b>TLV</b>	Threshold Limit Value
<b>TWA</b>	Time Weighted Average

## 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.
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## HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

## HEALTH, FLAMMABILITY &amp; 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>B</b>	
<b>C</b>	
<b>D</b>	
<b>E</b>	
<b>F</b>	

<b>G</b>	
<b>H</b>	
<b>I</b>	
<b>J</b>	
<b>K</b>	
<b>X</b>	Consult your supervisor or SOPs for special handling directions.

Safety Glasses	Splash Goggles	Face Shield & Protective Eyewear	Gloves
Boots	Protective 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:

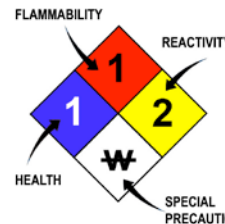
<b>Carc</b>	Carcinogenic
<b>Irrit</b>	Irritant
<b>NA</b>	Not Available
<b>NR</b>	No Results
<b>ND</b>	Not Determined
<b>NE</b>	Not Established
<b>NF</b>	Not Found
<b>SCBA</b>	Self-Contained Breathing Apparatus
<b>Sens</b>	Sensitization
<b>STOT RE</b>	Specific Target Organ Toxicity - Repeat Exposure
<b>STOT SE</b>	Specific Target Organ Toxicity - Single Exposure

## NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

<b>FLAMMABILITY LIMITS IN AIR:</b>	
<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>01</sub>, LD<sub>01</sub>, &amp; LD<sub>01</sub> or TC, TC<sub>01</sub>, LC<sub>01</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

## 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