

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



SDS Revision: 3.1

SDS Revision Date: 2/8/2016

## 1. PRODUCT &amp; COMPANY IDENTIFICATION

1.1	Product Name:	<b>OPI ARTIFICIAL NAIL REMOVER</b>
1.2	Chemical Name:	Acetone Solution
1.3	Synonyms:	NA
1.4	Trade Names:	AL601, AL604, AL606
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: 1008 (2004) and ADG Code (Australia).</p> <p><b>DANGER! HIGHLY FLAMMABLE LIQUID AND VAPOR. MAY CAUSE AN ALLERGIC SKIN REACTION. CAUSES EYE IRRITATION.</b></p> <p><u>Classification:</u> Flam. Liq. 2; Eye Irrit. 1A; STOT SE 3</p> <p><u>Hazard Statements (H):</u> H225 – Highly flammable liquid and vapor. H319 – Causes serious eye irritation. H336 – May cause drowsiness or dizziness.</p> <p><u>Precautionary Statements (P):</u> P210 – Keep away from heat/sparks/open flame/hot surfaces – No Smoking. P233 – Keep container tightly closed. P243 – Take precautionary measures against static discharge. P261 – Avoid breathing fume/mist/vapors/spray. P264 – Wash exposed skin areas thoroughly with soap and water after handling. P272 – Contaminated work clothing should not be allowed out of the workplace. P280 – Wear protective gloves/eye protection/face protection. P302+P352 – IF ON SKIN: Wash with soap and water. P305+P351+P338 – IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P333+P313 – If skin irritation or a rash occurs – Get medical advice/attention. P321 – For specific first aid treatment (See Section 4 of this Safety Data Sheet). P363 – Wash contaminated clothing before reuse. P370+P378 - In case of fire, CO<sub>2</sub>, Halon (if permitted), dry chemical, or foam for extinction. 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>	 
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## 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		
ACETONE	67-64-1	AL3150000	200-662-2	60-100	500	750	(500)	1185	NF	1000	NA	2500	NIOSH 590	
	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3; H225, H319, H336													
ETHYLHEXYL PALMITATE	29806-73-3	RT4740000	249-862-1	5-10	NA	NA	NF	NF	NF	NA	NA	NA		
PERSEA GRATISSIMA (AVOCADO) OIL	8024-32-6	CL2680000	232-428-0	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
ETHYLHEXYL METHOXYCINNAMATE	5466-77-3	UD3392732	226-775-7	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
SIMMONDSIA CHINENSIS (JOJOBA) SEED OIL	90045-98-0	NY9262700	296-292-4	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
FRAGRANCE (PARFUM)	NA	NA	NA	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
LECITHIN	8002-43-5	OG7565000	297-639-2	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
METHYLPARABEN	99-76-3	DH2450000	202-785-7	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA		
LIMONENE	138-86-3	CS8100000	205-341-0	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA	ALLERGEN	
	Flam. Liq. 3; Skin Irrit. 2; Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 1; H226, H315, H317, H400, H410													
HEXYL CINNAMAL	101-86-0	GD6560000	202-983-3	0.1-1	NA	NA	NF	NF	NF	NA	NA	NA	ALLERGEN	
	Skin Sens. 1B; Aquatic Chronic 2; H317, H411													
CI 42090 (BLUE 1)	3844-45-9	BQ4725000	223-339-8	0.1-1	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> If product gets in the eyes, flush with copious amounts of lukewarm water for at least 15 minutes. Open and close eyelid(s) to ensure thorough irrigation. Seek immediate medical attention. If problem persists, seek immediate medical attention.</p> <p><u>Skin:</u> If irritation occurs &amp; product is on the skin, rinse thoroughly with lukewarm water, followed by a thorough washing of the affected area with plenty of soap and water. Remove all contaminated clothing, including footwear and wash thoroughly before reuse. If irritation, redness or swelling persists, consult a physician immediately.</p> <p><u>Inhalation:</u> Remove victim to fresh air at once. If breathing stops, perform artificial respiration. Seek immediate medical attention.</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> The liquid may produce eye discomfort and is capable of causing temporary impairment of vision and/or transient eye inflammation, ulceration. The vapor is discomforting to the eye. Splashes may cause severe eye irritation, possible corneal burns and eye damage. Moderately irritating to the eyes. Symptoms of overexposure may include redness, itching, irritation and watering.</p> <p><u>Skin:</u> May be irritating to skin, especially after prolonged contact. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) upon prolonged or repeated exposure.</p> <p><u>Inhalation:</u> Vapors of this product may be moderately 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 concentrated vapors can cause central nervous system depression (e.g., drowsiness, dizziness, headaches, nausea). Odor may give some warning of exposure, but odor fatigue may occur.</p>										
4.3	Symptoms of Overexposure:	Symptoms of skin overexposure may include redness, itching, and irritation of affected areas. Overexposure in eyes may cause redness, itching and watering. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) upon prolonged or repeated exposure.										
4.4	Acute Health Effects:	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:	The material may accentuate any pre-existing dermatitis condition. Methylparaben contained in very small amounts in this product, may be a mild allergen to some sensitive individuals.										
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).										
		<table border="1"> <tr> <td><b>HEALTH</b></td> <td><b>1</b></td> </tr> <tr> <td><b>FLAMMABILITY</b></td> <td><b>3</b></td> </tr> <tr> <td><b>PHYSICAL HAZARDS</b></td> <td><b>0</b></td> </tr> <tr> <td><b>PROTECTIVE EQUIPMENT</b></td> <td><b>B</b></td> </tr> <tr> <td><b>EYES</b></td> <td><b>SKIN</b></td> </tr> </table>	<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>
<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:	<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:	<p>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.</p> <p>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.</p> <p><u>HazChem Code:</u> 3(Y)E <u>Hazard Identification Number:</u> 33</p>	

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**6. ACCIDENTAL RELEASE MEASURES**

6.1	Spills:	<p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate PPE.</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 <b>ONLY</b> 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:	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
		CHEMICAL NAME(S)	TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH	
		ACETONE	500	750	(500)	1185	NF	1000	NA	2500	NIOSH 590
		LIMONENE	NA	NA	NF	NF	NF	NA	NA	NA	ALLERGEN
		HEXYL CINNAMAL	NA	NA	NF	NF	NF	NA	NA	NA	ALLERGEN
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. 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. Contact lenses pose a special hazard; soft lenses may absorb and concentrate irritants.									
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:	However, 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:	Blue translucent liquid
9.2	Odor:	Melon-like odor
9.3	Odor Threshold:	ND
9.4	pH:	NA
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	56 °C (133 °F)
9.7	Flashpoint:	NA
9.8	Upper/Lower Flammability Limits:	2.6/12.8
9.9	Vapor Pressure:	NA
9.10	Vapor Density:	NA
9.11	Relative Density:	0.79
9.12	Solubility:	Soluble in water

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

9.13	Partition Coefficient (log P <sub>ow</sub> ):	NA
9.14	Autoignition Temperature:	465 °C (869 °F)
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	< 500 cPs
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:	Will not 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 or strong 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 toxicology data. Toxicology data, found in scientific literature, is available for some of the components of the product and is presented below: Acetone: LD <sub>50</sub> (oral, rat) = 5,800 mg/kg; LD <sub>50</sub> (oral, mouse) = 3 mg/kg; LC <sub>50</sub> (inh-6h, rat) = 50,100 ppm		
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 cause 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 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:	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 available, but are not presented in this Safety Data Sheet.
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 Safety Data Sheet.

**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)


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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 CTDGR.

14.1	49 CFR (GND):	UN1090, ACETONE SOLUTION, 3, II, LTD QTY (IP VOL ≤ 0.5 L) or CONSUMER COMMODITY, ORM-D – until 12/31/2020	
14.2	IATA (AIR):	CONSUMER COMMODITY, 9, ID8000 (≤ 0.5 L) UN1090, ACETONE SOLUTION, 3, II (> 0.5 L)	
14.3	IMDG (OCN):	UN1090, ACETONE SOLUTION, 3, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.4	TDGR (Canadian GND):	UN1090, ACETONE SOLUTION, 3, II, LTD QTY (IP VOL ≤ 1.0 L); or "LIMITED QUANTITY" or "QUANTITÉ LIMITÉE" or "LTD QTY" or "QUANT LTÉE" (≤ 1.0 L)	
14.5	ADR/RID (EU):	UN1090, ACETONE SOLUTION, 3, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.6	SCT (MEXICO):	UN1090, ACETONA EN SOLUCIÓN, 3, II, CANTIDAD LIMITADA (IP VOL ≤ 1.0 L)	
14.7	ADGR (AUS):	UN1090, ACETONE SOLUTION, 3, II, LTD QTY (IP VOL ≤ 0.5 L)	

\* This product may also be shipped as an Excepted Quantity (Inner Package Volume ≤ 30 mL, Total Quantity ≤ 500 mL per Outer Package)

## 15. REGULATORY INFORMATION



15.1	SARA Reporting Requirements:	This product contains <u>Acetone</u> , a substance subject to SARA Title III, Section 302 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):	<u>Acetone</u> : 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 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. WHMIS B2, D2B (Flammable, Other Toxic Effects).	
15.7	State Regulatory Information:	<u>Acetone</u> is listed on the following state criteria lists: Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), New Jersey Right-to-Know List (NJ), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), and Wisconsin Hazardous Substances List (WI). 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 listed in Annex I of EU Directive 67/548/EEC: <u>Acetone</u> : Flammable, Irritant (F, Xi). <u>Risk Phrases</u> (R) 11-36-66-67 Highly flammable. Irritating to eyes. Vapors may cause drowsiness and dizziness. <u>Safety Phrases</u> (S) 2-9-16-26 Keep out of reach of children. Keep container in well-ventilated place. Keep away from sources of ignition. In case of contact with skin, wash immediately with plenty of water.	

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## 16. OTHER INFORMATION

16.1	Other Information:	<b>DANGER! HIGHLY FLAMMABLE LIQUID AND VAPOR. MAY CAUSE AN ALLERGIC SKIN REACTION. CAUSES EYE IRRITATION.</b> Keep away from heat/sparks/open flame/hot surfaces – No Smoking. Keep container tightly closed. Take precautionary measures against static discharge. Avoid breathing fume/mist/vapors/spray. Wear protective gloves/eye protection/face protection. IF ON SKIN: Wash with soap and water. Avoid eye contact. IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If skin irritation or a rash 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>	

## 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
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### 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.
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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:

<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	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

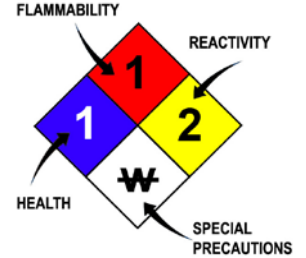
### NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

### 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>10</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>0</sub> or TC, TC<sub>0</sub>, LC<sub>10</sub>, &amp; LC<sub>0</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:

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