

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

SDS Revision: 1.0

SDS Revision Date: 3/22/2017

## 1. PRODUCT &amp; COMPANY IDENTIFICATION

1.1	Product Name:	<b>OPI POWDER PERFECTION DIPPING SYSTEM: CLEAR COLOR SET POWDER COLOR (ALL SHADES)</b>
1.2	Chemical Name:	NA
1.3	Synonyms:	NA
1.4	Trade Names:	DP ###
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:	This product is NOT classified as a HAZARDOUS SUBSTANCE or as DANGEROUS GOODS according to the classification criteria of NOHSC: 1088 (2004) and the ADG Code (Australia). The product is a fine powder, and may cause a slipping and falling hazard if spilled. <b>WARNING! MAY CAUSE AN ALLERGIC SKIN REACTION. CAUSES SERIOUS EYE IRRITATION.</b> Classification: Skin Sens. 1A; Eye Irrit. 2B
2.2	Label Elements:	<u>Hazard Statements (H)</u> : H317 – May cause an allergic skin reaction. H319 Causes serious eye irritation. <u>Precautionary Statements (P)</u> : P280 - Wear protective gloves/protective clothing/ eye protection/ face protection. P261 – Avoid breathing dusts. P272 – Contaminated work clothing should not be allowed out of the workplace. P280 – Wear protective gloves. P302+P352 – IF ON SKIN: Wash with plenty of soap and water. P333+P313 – If skin irritation or rash occurs: Get medical advice/attention. P363 – Wash contaminated clothing before reuse. P501 – Dispose of contents/container through licensed treatment, storage or disposal facility (TSDF).
2.3	Other Warnings:	<b>KEEP OUT REACH OF CHILDREN</b>



## 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				
					TLV	STEL	ppm	ppm	ppm	PEL	STEL	IDLH		
POLYETHYL METHACRYLATE	9003-42-3	NA	NA	> 85	NA	NA	NF	NF	NF	NA	NA	NA		
POLYMETHYL METHACRYLATE	9011-14-7	TR0400000	201-297-1	0.0-10	(10)	NA	NF	NF	NF	(10)	NA	NA		
BENZOYL PEROXIDE	94-36-0	DM8575000	202-327-6	0.0-1.0	(5)	NE	(5)	NF	NF	(5)	NA	1500		
SILICA	7631-86-9	VV7310000	231-545-4	0.0-0.5	NA	NA	NF	NF	NF	NA	NA	3000	RESP FRAC	

MAY ALSO CONTAIN – (COLORANTS, SHIMMERS &amp; COLOR-BLEND COMPONENTS):

ALUMINUM HYDROXIDE	21645-51-2	NA	244-492-7	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
BARIUM SULFATE	7727-43-7	CB7700000	201-353-5	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
BIS(GLYCIDOPHENYL) PROPANE/BISAMINOMETHYLNOR- BORNANE COPOLYMER	NA	NA	NA	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
CALCIUM ALUMINUM BOROSILICATE	65997-17-3	NA	266-046-0	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
CI 15850 (RED 6)	5858-81-1	NA	227-497-9	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
CI 15850 (RED 7)	5281-04-9	VV8760000	310-127-6	0.0-6.0	NA	NA	(2.5)	NF	NF	30	NA	NA	RESP FRAC
CI 17200 (RED 33)	3567-66-6	NA	222-656-9	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
CI 19140 (YELLOW 5)	1934-21-0	XR2275000	236-675-5	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
CI 42090 (BLUE 1)	3844-45-9	BQ4725000	223-339-8	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	
CI 45380 (RED 22)	548-26-5	NA	241-409-6	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA	

3. COMPOSITION & INGREDIENT INFORMATION – cont'd

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		
<b>MAY ALSO CONTAIN – (COLORANTS, SHIMMERS &amp; COLOR-BLEND COMPONENTS):</b>														
CI 45410 (RED 27)	13463-67-7	XR2275000	236-675-5	0.0-0.1	NA	NA	NF	NF	NF	NA	NA	NA		
CI 45410 (RED 28)	18472-87-2	NA	236-747-6	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 47000 (YELLOW 11)	8003-22-3	NA	232-318-2	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 60730 (EXT. VIOLET 2)	4430-18-6	NA	224-618-7	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 73360 (RED 30)	2379-74-0	VV8760000	310-127-6	0.0-6.0	NA	NA	(2.5)	NF	NF	30	NA	NA	RESP FRAC	
CI 75470 (CARMINE)	1390-65-4	FH8891000	215-724-4	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77007 (ULTRAMARINES)	101357-30-6	NA	215-111-1	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77491 (IRON OXIDES)	1309-37-1	UQ6400000	217-699-5	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77492 (IRON OXIDES - YELLOW)	51274-00-1	NA	257-098-5	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77499 (IRON OXIDES)	1309-37-9	UD3422500	248-666-3	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77742 (MANGANESE VIOLET)	10101-66-3	NA	233-257-4	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
CI 77891 (TITANIUM DIOXIDE)	13463-67-7	XR2275000	236-675-5	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
MICA	12001-26-2	NA	310-127-6	0.0-6.0	3	NA	NF	2.5	NF	20	NA	1500		
TIN OXIDE	18282-10-5	XQ4000000	242-159-0	0.0-6.0	NA	NA	NF	NF	NF	NA	NA	NA		
STOT SE 3; H335														

4. FIRST AID MEASURES


4.1	First Aid:	<p><b>Ingestion:</b> If ingested, do not induce vomiting. If product has been swallowed, drink plenty of water or milk IMMEDIATELY. If the patient is vomiting, continue to offer water or milk. Never give water or milk to an unconscious person. Contact the nearest Poison Control Center or local emergency number. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed.</p> <p><b>Eyes:</b> 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. If irritation persists seek immediate medical attention.</p> <p><b>Skin:</b> If irritation occurs and product is on the skin, rinse thoroughly with lukewarm water, followed by a thorough washing of the affected area with soap and water. Remove contaminated clothing and wash thoroughly before reuse. If irritation, redness or swelling persists, contact a physician immediately.</p> <p><b>Inhalation:</b> Remove victim to fresh air.</p>										
4.2	Effects of Exposure:	<p><b>Ingestion:</b> May cause irritation in mouth and throat. May cause nausea, vomiting and diarrhea.</p> <p><b>Eyes:</b> May cause irritation, redness, stinging and tearing.</p> <p><b>Skin:</b> May cause irritation, redness at the site of contact. Allergic contact dermatitis is possible with prolonged or repeated contact.</p> <p><b>Inhalation:</b> Prolonged exposure may cause irritation in nose and throat with chest discomfort, coughing and difficulty breathing. Excessive inhalation of dust may result in sensitization and irritation to respiratory tract. May cause asthma-like symptoms in some sensitive individuals.</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:	No long-term health effects are known.										
4.6	Target Organs:	Eyes, Skin, Respiratory System.										
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, and respiratory system). Preclude from exposure those individuals that are susceptible to dermatitis, asthma or bronchitis.										
		<table border="1"> <tr> <td style="background-color: #0000FF; color: white;"><b>HEALTH</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td style="background-color: #FF0000; color: white;"><b>FLAMMABILITY</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td style="background-color: #FFA500; color: white;"><b>PHYSICAL HAZARDS</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td colspan="2" style="background-color: #000000; color: white;"><b>PROTECTIVE EQUIPMENT</b></td> </tr> <tr> <td style="background-color: #000000; color: white;"><b>EYES</b></td> <td style="background-color: #000000; color: white;"><b>SKIN</b></td> </tr> </table>	<b>HEALTH</b>	<b>1</b>	<b>FLAMMABILITY</b>	<b>1</b>	<b>PHYSICAL HAZARDS</b>	<b>1</b>	<b>PROTECTIVE EQUIPMENT</b>		<b>EYES</b>	<b>SKIN</b>
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<b>PROTECTIVE EQUIPMENT</b>												
<b>EYES</b>	<b>SKIN</b>											

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## 5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	Keep away from excessive heat, open flames, sparks, and other possible sources of ignition.	
5.2	Extinguishing Methods:	Carbon Dioxide, Dry Chemical, Water Spray.	
5.3	Firefighting Procedures:	Keep containers cool until well after the fire is out. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway. Firefighters should wear full face, self-contained breathing apparatus (MSHA/NIOSH approved or the equivalent) and impervious protective clothing.	



## 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 <b>small spills</b> (e.g., &lt; 1 gallon (3.8 L)) wear appropriate personal protective equipment (e.g., goggles, gloves). Maximize ventilation (open doors and windows). 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 <b>large spills</b> (e.g., ≥ 1 gallon (3.8 L)), deny entry to all unprotected individuals. Transfer material 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 &amp; STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid prolonged contact with this material. Limit inhalation of 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. 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. Keep away from children at all times!
7.3	Special Precautions:	Spilled material may present a slipping hazard if left unattended. Clean all spills promptly.

## 8. EXPOSURE CONTROLS &amp; 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	
		POLYMETHYL METHACRYLATE	(10)	NA	NF	NF	NF	(10)	NA	NA	
		BENZOYL PEROXIDE	(5)	NE	(5)	NF	NF	(5)	NA	1500	
		SILICA	NA	NA	NF	NF	NF	NA	NA	3000	RESP FRAC
		CI 15850 (RED 7)	NA	NA	(2.5)	NF	NF	30	NA	NA	RESP FRAC
		CI 73360 (RED 30)	NA	NA	(2.5)	NF	NF	30	NA	NA	RESP FRAC
	MICA	3	NA	NF	2.5	NF	20	NA	1500	RESP FRAC	
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:	Avoid eye contact. Use approved safety glasses or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).									
8.5	Hand Protection:	If anticipated that prolonged & repeated skin contact will occur during use of this product, wear latex or rubber gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR §1910.138, the appropriate standards of Canada, of the E.C. member states.									
8.6	Body Protection:	No special body protection is required under typical circumstances of use and handling. If necessary, refer to appropriate standards of Canada, the E.C. member states, or U.S. OSHA.									

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**9. PHYSICAL & CHEMICAL PROPERTIES**

9.1	Appearance:	Powder. Various colors.
9.2	Odor:	Mild acrylic odor, in bulk
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:	264 °C (508 °F), TCC
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:	Insoluble in water
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:	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 (CO, CO <sub>2</sub> ) and nitrogen (NOx)).
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 oxides, 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 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:	This product contains <u>Benzoyl Peroxide</u> and <u>Silica</u> which are not carcinogenic to humans, but is 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:	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. However, 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:	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 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

**15. REGULATORY INFORMATION**

15.1	SARA Reporting Requirements:	This product contains <u>Benzoyl Peroxide</u> , a substance subject to SARA Title III, Section 313 reporting requirements.
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:	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 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. 
15.7	State Regulatory Information:	<u>Benzoyl Peroxide</u> is found on the following state criteria lists: FL, MN, NJ, PA and WA. <u>Polymethyl Methacrylate</u> is found on the following state criteria list: NJ, PA No other ingredients in this product, present in a concentration of 1.0% or greater, are listed on any of the following state criteria lists: California Proposition 65 (CA65), Delaware Air Quality Management List (DE), Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (NJ), New York Hazardous Substances List (NY), Pennsylvania Right-to-Know List (PA), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI).
15.8	Other Requirements:	NA

**16. OTHER INFORMATION**

16.1	Other Information:	<b>WARNING! MAY CAUSE AN ALLERGIC SKIN REACTION.</b> Precisely follow directions and Safety Data Sheet for use. Avoid 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. <b>KEEP OUT OF REACH OF CHILDREN.</b> In case of emergency, contact your physician or local Poison Control Center immediately. <b>FOR PROFESSIONAL USE ONLY!</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>

O·P·I



**ShipMate**  
Dangerous Goods  
Training & Consulting

## 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 & 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:

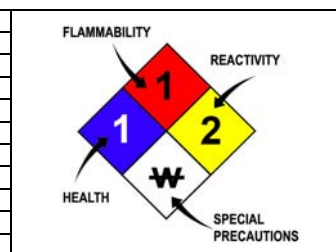
<b>Carc</b>	Carcinogenic
<b>Irrit</b>	Irritant
<b>NA</b>	Not Available
<b>NR</b>	No Results
<b>ND</b>	Not Determined
<b>NE</b>	Not Established
<b>NF</b>	Not Found
<b>SCBA</b>	Self-Contained Breathing Apparatus
<b>Sens</b>	Sensitization
<b>STOT RE</b>	Specific Target Organ Toxicity – Repeat Exposure
<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>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>01</sub> or TC, TC<sub>01</sub>, LC<sub>10</sub>, &amp; LC<sub>01</sub></b>	Lowest dose (or concentration) to cause lethal or toxic effects
<b>IARC</b>	International Agency for Research on Cancer
<b>NTP</b>	National Toxicology Program
<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances
<b>BCF</b>	Bioconcentration Factor
<b>TL<sub>m</sub></b>	Median threshold limit
<b>log K<sub>OW</sub> or log K<sub>OC</sub></b>	Coefficient of Oil/Water Distribution

### REGULATORY INFORMATION:

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

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

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

### 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