



SAFETY DATA SHEET

Prepared to OSHA, ACC, ANSI, WHS, WHMIS, GHS & 1272/2008/EC Standards SDS Revision: 1.0 SDS Revision Date: 11/2/2019

1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	
1.2	Chemical Name:	Acid Mixture
1.3	Synonyms:	NA
1.4	Trade Names:	NA
1.5	Product Use:	
1.6	Distributor's Name:	Charter Chemical Solutions
1.7	Distributor's Address:	1500 Marine Bay Dr. Building 106, Clear Lake Shores, TX 77565 USA
1.8	Emergency Phone:	CHEMTREC +1 (800) 424-9300 / +1 (703) 527-3887
1.9	Business Phone / Fax:	+1 (281) 758-8738

2. HAZARDS IDENTIFICATION

2.1	Hazard Identification:	This product is classified as a hazardous substance and as dangerous goods according to the classification criteria of WHS and the ADG Code (Australia). DANGER! CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY BE CORROSIVE TO METALS. MAY CAUSE RESPIRATORY IRRITATION. Classification: Skin Corrosion 1B, Metal Corrosion 1, Eye Irrit. 2A, STOT SE 3	
2.2	Label Elements:	<p>Hazard Statements (H): H290 – May be corrosive to metals. H314 – Causes severe skin burns and eye damage. H319 – Causes serious eye irritation. H335 – May cause respiratory irritation.</p> <p>Precautionary Statements (P): P234 – Keep only in original packaging. P261 – Avoid breathing mist/vapor/spray. P264 – Wash hands and exposed skin areas with soap and warm water thoroughly after handling. P271 – Use only outdoors or in a well-ventilated area. P280 – Wear protective gloves/protective clothing/eye protection/face protection. P301+P330+P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. 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. P310 – Immediately call a POISON CENTER/doctor. P321 – Specific treatment see this container label or section 4 of this SDS. P363 – Wash contaminated clothing before use. P390 – Absorb spillage to prevent material-damage. P403+P233 - Store in a well-ventilated place. P405 – Store locked up. P406 – Store in a corrosion resistant container with a resistant inner liner. P501 – Dispose of contents/ container to an approved waste disposal plant.</p>	
2.3	Other Warnings:	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 Safety Data Sheet. KEEP LOCKED UP AND OUT OF REACH OF CHILDREN.	

3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m ³)									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		Ppm			ppm				
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
PHOSPHORIC ACID (75%)	7664-38-2	TB6300000	231-633-2	15-40	(1)	(3)	NF	NF	NF	NA	NA	1000		
HYDROCHLORIC ACID	7647-01-0	MW4025000	231-595-7	10-20	2	5	5	7.5	5	5	7	50		
NON-IONIC SURFACTANT	NA	NA	NA	0-1	NA	NA	NF	NF	NF	NA	NA	NA		

4. FIRST AID MEASURES

4.1	First Aid:	<p>Ingestion: Do not induce vomiting. Call ChemTrec or local Poison Control services for medical advice. If vomiting occurs, keep victim's head lowered (forward) to keep vomit from entering the lungs. Call 911 for emergency medical transport if any symptoms noted.</p> <p>Eyes: Remove and discard contact lenses if worn and flush eyes with large amounts of water for at least 20 minutes. Seek immediate medical attention when done rinsing eyes.</p> <p>Skin: Remove contaminated clothing and wash exposed skin with large amounts of soap and water. Seek medical attention if any blistering, swelling or open sores develop.</p> <p>Inhalation: Move victim to fresh air. Contact emergency medical services (e.g., 911) if any difficulty in breathing occurs or if victim loses consciousness.</p>
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4. FIRST AID MEASURES – cont'd

4.2	Effects of Exposure:	<p>Eyes: Severe or permanent eye damage.</p> <p>Skin: Burns upon direct contact to exposed areas.</p> <p>Ingestion: Severe burns of mouth, throat, esophagus, and stomach.</p> <p>Inhalation: Severe irritation or burns in respiratory tract and mucous membranes. Possible lung damage.</p>																				
4.3	Symptoms of Overexposure:	<p>Eyes: Redness, burning, irritation, and swelling around eyes</p> <p>Skin: Redness, burning, itching, rash, blistering of skin.</p> <p>Ingestion: Nausea, vomiting, severe abdominal pain.</p> <p>Inhalation: Coughing, wheezing, swelling of throat, irritation in mucous membranes, difficulty breathing.</p>																				
4.4	Acute Health Effects:	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. May be harmful if swallowed. Causes burns. May be harmful if absorbed through skin.																				
4.5	Chronic Health Effects:	May damage the nervous system, kidneys and/or liver.																				
4.6	Target Organs:	Eyes, Skin, Central Nervous System, Kidneys, Liver, Respiratory System, Spleen and Bones.																				
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, respiratory system, liver, blood-forming organs) or impaired kidney function may be more susceptible to the effects of this substance.																				
		<table border="1"> <tr> <td colspan="3">HEALTH</td> <td>3</td> </tr> <tr> <td colspan="3">FLAMMABILITY</td> <td>0</td> </tr> <tr> <td colspan="3">PHYSICAL HAZARDS</td> <td>1</td> </tr> <tr> <td colspan="4">PROTECTIVE EQUIPMENT</td> </tr> <tr> <td>EYES</td> <td>SKIN</td> <td>LUNGS</td> <td></td> </tr> </table>	HEALTH			3	FLAMMABILITY			0	PHYSICAL HAZARDS			1	PROTECTIVE EQUIPMENT				EYES	SKIN	LUNGS	
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FLAMMABILITY			0																			
PHYSICAL HAZARDS			1																			
PROTECTIVE EQUIPMENT																						
EYES	SKIN	LUNGS																				
4.8	Notes to Physician:	This product contains hydrochloric and phosphoric acid and is potentially fatal if ingested even in small amounts. 24-hour admission should be considered in asymptomatic or minimally symptomatic patients as delayed toxic effects including pulmonary edema and multi-organ failure may occur.																				

5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	Non-flammable. May react with metals to release hydrogen gas, which can form explosive mixtures with air.	
5.2	Extinguishing Methods:	Use fire-extinguishing media appropriate for surrounding materials, water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Move containers from fire area if this can be done without risk.	
5.3	Firefighting Procedures:	As with any fire, firefighters should wear appropriate protective equipment including a MSHA/NIOSH approved or equivalent self-contained breathing apparatus (SCBA) and protective clothing. Fight fires as for surrounding materials. Hazardous decomposition products may be released. Thermal degradation may produce oxides of carbon, and/or nitrogen, hydrocarbons and/or derivatives. Fire should be fought from a safe distance. Keep containers cool until well after the fire is out. Use water spray to cool fire-exposed surfaces and to protect personal. Fight fire upwind. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway.	

6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	<p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment (PPE). Use safety glasses or safety goggles and face shield; use gloves and other protective clothing (e.g., apron, boots, etc.) to prevent skin contact.</p> <p>Small Spills: Wear appropriate protective equipment including gloves and protective eyewear. Use a non-combustible, inert material such as vermiculite or sand to soak up the product and place into a container for later disposal.</p> <p>Large Spills: Keep incompatible materials (e.g., organics such as oil, alkalies) away from spill. Stay upwind and away from spill or release. Isolate immediate hazard area and keep unauthorized personnel out of area. Stop spill or release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant. Recover as much free liquid as possible and collect in acid-resistant container. Use absorbent to pick up residue. Avoid discharging liquid directly into a sewer or surface waters.</p>
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7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid breathing mists or spray. Avoid eye and skin contact. Wear protective equipment when handling product. Keep out of the reach of children. Do not eat, drink or smoke when handling this product. Wash thoroughly after handling. Do not expose to heat and flame. Use only in ventilated areas. Keep out of the reach of children. Immediately clean-up and decontaminate any spills or residues. Prevent material or contaminated water from being discharged to any waterway, sewer or drain.
7.2	Storage & Handling:	Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans) away from heat and direct sunlight. Store in acid-resistant containers. Keep containers covered when not in use. Avoid temperatures above 40 °C (120 °F). Keep away from incompatible substances (See Section 10). Protect containers from physical damage.
7.3	Special Precautions:	Empty containers may retain hazardous product residues. Dispose of contents/ container to an approved waste disposal plant



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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	
		PHOSPHORIC ACID	(1)	(3)	NF	NF	NF	NA	NA	1000	
		HYDROCHLORIC ACID	2	5	5	7.5	5	5	7	50	
8.2	Ventilation & Engineering Controls:	Use local or general exhaust ventilation to effectively remove and prevent buildup of vapors or mist generated from the handling of this product. Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station). Emissions from ventilation or work process equipment should be checked to ensure compliance with environmental protection requirements.									
8.3	Respiratory Protection:	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. Use properly fitted particulate filter respirator complying with an approved standard. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.									
8.4	Eye Protection:	AVOID EYE CONTACT. Safety glasses with side shields must be used when handling or using this product. A protective face shield is also recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).									
8.5	Hand Protection:	AVOID SKIN CONTACT. Wear protective, chemical-resistant gloves (e.g., nitrile rubber) when using or handling this product. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.									
8.6	Body Protection:	AVOID CONTACT. A chemical resistant apron and/or protective clothing (e.g., nitrile rubber) are recommended when handling or using large quantities of this product. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.									

9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Appearance:	Clear, colorless liquid
9.2	Odor:	Sharp, pungent, chlorine-like odor
9.3	Odor Threshold:	0.25-10 ppm (hydrochloric acid)
9.4	pH:	≤ 2.0
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	> 100 °C
9.7	Flashpoint:	NA
9.8	Upper/Lower Flammability Limits:	NA
9.9	Vapor Pressure:	NA
9.10	Vapor Density:	NA
9.11	Relative Density:	1.27
9.12	Solubility:	Miscible in water
9.13	Partition Coefficient (log P _{ow}):	NA
9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	Non-viscous
9.17	Other Information:	NA

10. STABILITY & REACTIVITY

10.1	Stability:	Stable unless exposed to moisture, excessive heat or incompatible substances.
10.2	Hazardous Decomposition Products:	Phosphorus pentoxide, hydrogen gas, chlorine gas, hydrogen chloride gas, unidentified organic compounds, oxides of carbon.
10.3	Hazardous Polymerization:	Will not occur.
10.4	Conditions to Avoid:	Contact with heat, flames, sparks or other ignition sources. Avoid incompatible substances.
10.5	Incompatible Substances:	Bases, metals, mercuric sulfate, perchloric acid, carbides, acetylides, phosphides & silicides.

11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: YES	Absorption: YES	Ingestion: YES
11.2	Toxicity Data:	Phosphoric Acid: LD ₅₀ (oral, rat) = 1,530 mg/kg		



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11.3	Acute Toxicity:	See Section 4.4
11.4	Chronic Toxicity:	See Section 4.5
11.5	Suspected Carcinogen:	This product contains <u>Hydrochloric Acid</u> , which is not carcinogenic to humans, but is listed as Group 3 carcinogens by the IARC. This product does not contain any chemicals known to the State of California to cause cancer or other reproductive harm. For more information go to www.P65Warnings.ca.gov .
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 4.2
11.8	Biological Exposure Indices:	NE
11.9	Physician Recommendations:	Treat symptomatically.

12. ECOLOGICAL INFORMATION

12.1	Environmental Stability:	There are no specific data available for this product.
12.2	Effects on Plants & Animals:	There are no specific data available for this product.
12.3	Effects on Aquatic Life:	Phosphoric Acid: EC ₅₀ (Daphnia Magna, 12h) = 4.6 mg/L

13. DISPOSAL CONSIDERATIONS

13.1	Waste Disposal:	Review current local, state and federal laws, codes, statutes and regulations to determine current status and appropriate disposal method for the ingredients listed in Section 2. Any disposal practice must be in compliance with local, state, and federal laws and regulations. Contact the appropriate agency for specific information. Treatment, transport, storage and disposal of hazardous waste must be provided by a licensed facility or waste hauler.
13.2	Special Considerations:	U.S. EPA Hazardous Waste – Characteristic - Corrosive (D002); State Waste Codes: CA-791, TX-105H, WA-WT02, MI-029L, CT-CR04, RI-R004; EWC: 06 01 06 (Other Acids)

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):	UN3264, CORROSIVE LIQUIDS, ACIDIC, INORGANIC, N.O.S. (phosphoric acid, hydrochloric acid), 8, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.2	IATA (AIR):	UN3264, CORROSIVE LIQUIDS, ACIDIC, INORGANIC, N.O.S. (phosphoric acid, hydrochloric acid), 8, II, LTD QTY (IP VOL ≤ 0.1 L)	
14.3	IMDG (OCN):	UN3264, CORROSIVE LIQUIDS, ACIDIC, INORGANIC, N.O.S. (phosphoric acid, hydrochloric acid), 8, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.4	TDGR (Canadian GND):	UN3264, CORROSIVE LIQUIDS, ACIDIC, INORGANIC, N.O.S. (phosphoric acid, hydrochloric acid), 8, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.5	ADR/RID (EU):	UN3264, CORROSIVE LIQUIDS, ACIDIC, INORGANIC, N.O.S. (phosphoric acid, hydrochloric acid), 8, II, LTD QTY (IP VOL ≤ 1.0 L)	
14.6	SCT (MEXICO):	UN3264, LIQUIDOS, CORROSIVOS, ACIDO, INORGANICO, N.E.P. (ácido fosfórico, ácido clorhídrico), 8, II, CANTIDAD LIMITADA (IP VOL ≤ 1.0 L)	
14.7	ADGR (AUS):	UN3264, CORROSIVE LIQUIDS, ACIDIC, INORGANIC, N.O.S. (phosphoric acid, hydrochloric acid), 8, II, LTD QTY (IP VOL ≤ 1.0 L)	



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15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements:	This product contains <u>Phosphoric Acid</u> and <u>Hydrochloric Acid</u> , substances subject to SARA Title III, Section 313 reporting requirements.
15.2	SARA TPQ:	<u>Hydrochloric Acid</u> : 2,270 kg (5,000 lbs).
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory.
15.4	CERCLA Reportable Quantity:	<u>Phosphoric Acid</u> : 2,270 kg (5,000 lbs); <u>Hydrochloric Acid</u> : 2,270 kg (5,000 lbs).
15.5	Other Federal Requirements:	<u>Hydrochloric Acid</u> is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 or Class 2 Ozone depleters. Hydrochloric acid is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA. OSHA considers hydrochloric acid extremely hazardous.
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 Class E, D1 (Corrosive Material, Materials Causing Immediate and Serious Toxic Effects). 
15.7	State Regulatory Information:	<u>Phosphoric Acid</u> is found on the following state criteria lists: Massachusetts Hazardous Substances List (MA) and Pennsylvania Right-to-Know List (PA). <u>Hydrochloric Acid</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA and 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:	NA

16. OTHER INFORMATION

16.1	Other Information:	DANGER! MAY BE CORROSIVE TO METALS. CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY CAUSE RESPIRATORY IRRITATION. Obtain instructions before use. Do not use until all safety precautions have been read and understood. Keep only in original packaging. Do not breathe dust or mist. Avoid breathing dust/mist/vapor/spray. Wash hands and exposed skin areas with soap and warm water thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/eye protection/face protection. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before use. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. For specific treatment - see this container label or section 4 of this SDS. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material-damage. Store in a well-ventilated place. Store locked up. Store in a corrosion resistant container with a resistant inner liner. KEEP LOCKED UP AND OUT OF REACH OF CHILDREN.
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 Smarter Sorting, ShipMate & Charter Chemical Solutions' 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:	Charter Chemical Solutions 1500 Marine Bay Dr. Building 106 Clear Lake Shores, TX 77565 USA Tel: +1 (281) 758-8738 http://www.charterchemicalsolutions.com 
16.5	Prepared by:	Smarter Sorting 2900 E. Cesar Chavez Street Austin, TX 78702 USA Tel: +1 (512) 593-2594 E-mail: support@smarterorting.com https://www.smarterorting.com 



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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
RTECS No.	Registry of Toxic Effects of Chemical Substances Number
EINECS No.	European Inventory of Existing Commercial Chemical Substances Number

EXPOSURE LIMITS IN AIR:

ACGIH	American Conference on Governmental Industrial Hygienists
IDLH	Immediately Dangerous to Life and Health
NOHSC	National Occupational Health and Safety Commission (Australia)
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.
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HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

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

HEALTH
FLAMMABILITY
PHYSICAL HAZARDS
PERSONAL PROTECTION

PERSONAL PROTECTION RATINGS:

A	
B	
C	
D	
E	
F	

G	
H	
I	
J	
K	
X	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:

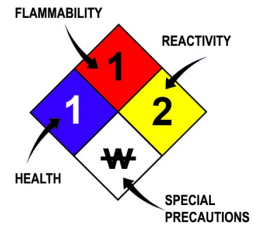
Carc	Carcinogenic
Irrit	Irritant
NA	Not Available
NR	No Results
ND	Not Determined
NE	Not Established
NF	Not Found
SCBA	Self-Contained Breathing Apparatus
Sens	Sensitization
STOT RE	Specific Target Organ Toxicity – Repeat Exposure
STOT SE	Specific Target Organ Toxicity – Single Exposure

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

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

HAZARD RATINGS:

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



TOXICOLOGICAL INFORMATION:

LD ₅₀	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
LC ₅₀	Lethal concentration (gases) which kills 50% of the exposed animal
ppm	Concentration expressed in parts of material per million parts
TD ₁₀	Lowest dose to cause a symptom
TCL ₀	Lowest concentration to cause a symptom
TD ₁₀ , LD ₁₀ , & LD ₀ or TC, TC ₀ , LC ₁₀ , & LC ₀	Lowest dose (or concentration) to cause lethal or toxic effects
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL _m	Median threshold limit
log K _{ow} or log K _{oc}	Coefficient of Oil/Water Distribution

REGULATORY INFORMATION:

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

WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

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

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