

SAFETY DATA SHEET

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


SDS Revision: 1.1

SDS Revision Date: 12/24/2015

1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	ALUMIWELD REPAIR ROD FOR ALUMINUM AND WHITE METALS
1.2	Chemical Name:	NA
1.3	Synonyms:	P/N 44810
1.4	Trade Names:	Alumiweld Repair Rod for Aluminum and White Metals
1.5	Product Uses & Restrictions:	Repair Rod for Aluminum and White Metals
1.6	Distributor's Name:	Harbor Freight Tools USA, Inc.
1.7	Distributor's Address:	26541 Agoura Road, Calabasas, CA 91302 USA
1.8	Emergency Phone:	CHEMTREC: +1 (703) 527-3887 / +1 (800) 424-9300 (CCN 676687)
1.9	Business Phone / Fax:	+1 (805) 388-1000

2. HAZARDS IDENTIFICATION

2.1	Hazard Identification:	<p>This product is classified neither classified as a hazardous substance nor as dangerous goods according to the classification criteria of NOHSC: 1088 (1999) and ADG Code (Australia).</p> <p>WARNING! CAUSES SERIOUS EYE IRRITATION. MAY CAUSE RESPIRATORY IRRITATION.</p> <p><u>Classification:</u> Aquatic Acute 1; Eye Irrit. 2; STOT SE 3</p> <p><u>Hazard Statements (H):</u> H319 – Causes serious eye irritation. H335 – May cause respiratory irritation. H400 – Very toxic to aquatic life.</p> <p><u>Precautionary Statements (P):</u> P261 – Avoid breathing dust/fume. 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. P273 – Avoid release to the environment. P280 – Wear protective gloves/protective clothing/eye protection/face protection. P304+P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position 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. P312 – Call a POISON CENTER or doctor/physician if you feel unwell. P337+P313 – If eye irritation persists: Get medical advice/attention. P391 – Collect spillage. P501 – Dispose of contents/container to licenses treatment, storage and disposal facility (TSDf).</p>	
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3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m ³)									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		ppm			ppm				
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
ZINC	7440-66-6	ZG8600000	231-175-3	7-13	NA	NA	NF	NF	NF	NA	NA	NA		
Aquatic Acute 1; Aquatic Chronic 1; H400, H410														
ALUMINUM	7429-90-5	BD0330000	231-072-3	0.5-2	10	NA	5	NF	NF	10	15	5	RESP FRAC	
Pyr. Sol. 1, Water React. 2; H250, H261														
COPPER	7440-50-8	GL5325000	231-159-6	0.5-1.5	(0.2)	NA	NF	(0.2)	NF	(0.1)	NA	100		
MAGNESIUM	7439-95-4	NA	231-104-6	0-1.0	NA	NA	NF	NF	NF	NA	NA	NA		
Flam. Sol. 1; Water-react. 2; Self-heat. 1; H228, H261, H252														

4. FIRST AID MEASURES

4.1	First Aid:	<p><u>Ingestion:</u> Ingestion is unlikely; however, particulates from grinding or cutting may be ingested. DO NOT INDUCE VOMITING. Contact ChemTrec at +1 (703) 527-3887 or the nearest Poison Control Center or local emergency telephone number for assistance and instructions. Seek immediate medical attention. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.</p> <p><u>Eyes:</u> Flush eyes thoroughly with copious amounts of water for at least 15 minutes, holding eyelid(s) open to ensure complete flushing. If irritation persists, seek immediate medical attention. Arc rays can injure eyes. If exposed to arc rays, move victim to a dark room and remove contact lenses, cover eyes with padded dressing and seek medical advice/attention.</p> <p><u>Skin:</u> Remove contaminated clothing and wash affected areas with soap and water. If irritation persists, seek prompt medical attention. Do not wear contaminated clothing until after it has been properly cleaned.</p> <p><u>Inhalation:</u> Remove victim to fresh air at once. If breathing is difficult, administer supplemental oxygen and seek immediate medical attention. If breathing stops, perform artificial respiration.</p>
4.2	Effects of Exposure:	<p><u>Ingestion:</u> Gastrointestinal irritation, nausea, and/or vomiting.</p> <p><u>Eyes:</u> Mild to moderate irritant.</p> <p><u>Skin:</u> Redness, irritation, rash at site of exposure.</p> <p><u>Inhalation:</u> Inhalation of fumes can cause a metallic taste, tightness in the chest, nausea, fever, fatigue and allergic reaction. Fumes may cause irritation to nasal membranes, bronchial tubes and lungs.</p>

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4. FIRST AID MEASURES – cont'd

4.3	Symptoms of Overexposure:	<u>Ingestion:</u> Intestinal discomfort, nausea, vomiting, and diarrhea. <u>Eyes:</u> Mild irritation, redness, and watering. <u>Skin:</u> Contact dermatitis, characterized by localized red or puffy dry skin and itching. <u>Inhalation:</u> Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, metal fume fever, difficulty in breathing, frequent coughing, or chest pain.																									
4.4	Acute Health Effects:	<u>Ingestion:</u> Gastrointestinal irritation and central nervous system depression. <u>Eyes:</u> Mild to moderate irritant. <u>Skin:</u> Prolonged or repeated contact may cause contact dermatitis (localized redness or rash). <u>Inhalation:</u> Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, metal fume fever, difficulty in breathing, frequent coughing, or chest pain. Overexposure to metals oxide may cause metal fume fever characterized by metallic taste, tightness of chest and fever. Symptoms may last 24-48 hours following overexposure.																									
4.5	Chronic Health Effects:	<u>Ingestion:</u> Ingestion or inhalation of fumes and particulate may cause gastrointestinal disturbance. <u>Eyes:</u> None reported by the manufacturer. <u>Skin:</u> Prolonged or repeated contact may cause contact dermatitis (localized redness or rash). <u>Inhalation:</u> Long term exposure to welding and allied processes gases, dusts and fumes may contribute to pulmonary irritation or pneumoconiosis or "siderosis." Inhalation of fumes can cause irritation of the respiratory tract, lung damage and asthma-like symptoms. Long-term overexposure to manganese compounds may affect the central nervous system. Symptoms may be similar to Parkinson's Disease and can include slowness, changes in handwriting, gait impairment, muscle spasms and cramps and less commonly, tremor and behavioral changes. Employees who are overexposed to manganese compounds should be seen by a physician for early detection of neurologic problems.																									
4.6	Target Organs:	Eyes & Respiratory System.																									
4.7	Medical Conditions Aggravated by Exposure:	Individuals with allergies or impaired respiratory function may have symptoms worsened by exposure to welding fumes; however, such reaction cannot be predicted due to the variation in the composition and in the quantity of the decomposition products.																									
<table><tr><td colspan="4">HEALTH</td><td>1</td></tr><tr><td colspan="4">FLAMMABILITY</td><td>0</td></tr><tr><td colspan="4">PHYSICAL HAZARDS</td><td>0</td></tr><tr><td colspan="4">PROTECTIVE EQUIPMENT</td><td>E</td></tr><tr><td>EYES</td><td>SKIN</td><td>LUNGS</td><td colspan="2"></td></tr></table>			HEALTH				1	FLAMMABILITY				0	PHYSICAL HAZARDS				0	PROTECTIVE EQUIPMENT				E	EYES	SKIN	LUNGS		
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EYES	SKIN	LUNGS																									

5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	Under extreme heat, glass may melt or crack. When exposed to high temperatures toxic fumes may be released from broken lamps.	
5.2	Extinguishing Methods:	Water, Dry Chemical, Foam, & Carbon Dioxide.	
5.3	Firefighting Procedures:	Fight fires as for surrounding materials. Firefighters should wear a MSHA/NIOSH approved or equivalent self-contained breathing apparatus (SCBA) and protective clothing. Fire should be fought from a safe distance. 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.	

6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	Before cleaning any spill, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment including gloves, glasses and NIOSH approved (or equivalent) dust respirator. Spilled product may produce a tripping hazard. Particulate from grinding, welding or burning may produce a slipping hazard. Carefully vacuum or sweep up the particulate, slag, dusts or powders. Dispose of properly in accordance with local, state and federal regulations. Wash all affected areas. Remove any contaminated clothing and wash thoroughly before reuse.
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7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid contact to eyes, skin, and mucous membranes. Avoid inhalation of vapors, gases, fumes and dusts. Wash thoroughly after handling and use. Do not smoke, eat, drink, chew gum or tobacco, or apply cosmetics within the working area. Do not store or bring tobacco products, gum, food, drinks or cosmetics within the working area. Otherwise follow the standards of good industrial hygiene practices.
7.2	Storage & Handling:	No unusual methods are required. Keep product contained and retain all warning and identity labels. Preferred storage is a sheltered warm area with temperature and humidity control to prevent high humidity and "going through the dew point." Keep away from incompatible materials (e.g., strong acids, alkalis, oxidizers) – see also Section 10. Open containers slowly on a stable surface. Keep container tightly closed when not in use.
7.3	Special Precautions:	Read and understand the manufacturer's instructions and the precautionary label on this product. See American National Standard Z-49.1, "Safety in Welding, Cutting and Allied Processes," published by the American Welding Society, P. O. Box 351040, Miami, FL 33135 and OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for additional details regarding fire and explosion control, exposure control and other special precautions.

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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	
		ALUMINUM	10	NA	5	NF	NF	10	15	5	RESP FRAC
		COPPER	(0.2)	NA	NF	(0.2)	NF	(0.1)	NA	100	
8.2	Ventilation & Engineering Controls:	Use industrial hygiene monitoring equipment to ensure that exposure does not exceed threshold limit values. Use with adequate ventilation (e.g., open doors and windows, local exhaust ventilation). Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station). Use in a chemical fume hood when working with large quantities of product and provide adequate ventilation (e.g., local exhaust ventilation, fans).									
8.3	Respiratory Protection:	CAUTION: Welding or cutting may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. Use NIOSH approved respiratory protection. See ANSI Z49.1-1967 Safety in Welding and Cutting published by the American Welding Society. Keep the exposure within legal limits. In the worker's breathing zone and the general area, the fumes and gases must be kept below the TLVs and the equivalent exposure must compute to less than one. Keep exposure as low as possible. Use respirable fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below the TLV. Where respiratory protection is necessary, NIOSH approved respiratory protection should be used. The selection of the appropriate respiratory protection (dust respirator, etc.) should be based on the actual or potential airborne contaminants and their concentrations present.									
8.4	Eye Protection:	Wear helmet or use face shield with filter lens according to ANSI Z87.1. Provide protective screens and flash goggles, if necessary, to shield others. Wear safety glasses with UV protective side shields or goggles. Wear contact lenses in combination with safety eyewear, except where the contact lenses create a likelihood of injury from intense heat, highly particulate atmosphere, or where their use is prohibited. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).									
8.5	Hand Protection:	Wear head, hand and body protection that help to prevent injury from hot metal, sparks, slag, infrared radiation, UV radiation, abrasions, contusions and heat stress. Protective clothing will not generally prevent shock except for leather if kept dry. Gloves made of leather with inside seams (or those that give equal performance) are preferred. . If necessary, refer to U.S. OSHA 29 CFR §1910.138, the appropriate standards of Canada, or the EU member states.									
8.6	Body Protection:	Wear head, hand and body protection that help to prevent injury from radiation, sparks and electrical shock. Wear flame resistant ear plugs to keep sparks out of ears. See ANSI Z-49.1. The clothing may include heat/fire resistant gloves, overalls, aprons, sleeves, footwear, welder's spats and head cover. Wear garments made of leather, heavyweight tightly woven wool or cotton. Keep clothing clean (free of oil, grease or solvents) and in good repair. Do not wear clothing with frayed edges, tears or holes. Do not roll up sleeves or trousers (pants should not be cuffed). If necessary, refer to appropriate standards of Canada, the EU member states, or U.S. OSHA.									

9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Appearance:	Silver-white to bluish metal. Various shapes and sizes
9.2	Odor:	NA
9.3	Odor Threshold:	Odorless
9.4	pH:	NA
9.5	Melting Point/Freezing Point:	1,314 °C (2,400 °F)
9.6	Initial Boiling Point/Boiling Range:	387 °C (728 °F)
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:	6.68
9.12	Solubility:	Insoluble
9.13	Partition Coefficient (log P _{ow}):	NA
9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	NA

10. STABILITY & REACTIVITY

10.1	Stability:	Stable under normal conditions of use (See Section 7).
10.2	Hazardous Decomposition Products:	Irritating vapors and toxic gases (e.g., carbon monoxide and carbon dioxide) when involved in fire.
10.3	Hazardous Polymerization:	Will not occur.
10.4	Conditions to Avoid:	Use or storage near incompatible substances.
10.5	Incompatible Substances:	Strong oxidizing agents, strong acids and bases.

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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, but is not presented in this document.		
11.3	Acute Toxicity:	See Section 4.4		
11.4	Chronic Toxicity:	See Section 4.5		
11.5	Suspected Carcinogen:	NA		
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:	General Nuisance Dusts: Many of the metal oxides generated as components of welding fume, are considered nuisance dusts (such as oxides of titanium and aluminum), which are essentially nontoxic and chemically nonirritating. Skin contact has shown no problems other than possible drying and mechanical irritation. Eye contact can produce particulate irritation. Excessive inhalation can produce mild pulmonary irritation and possible non-disabling slight fibrosis of the lungs.		
11.8	Biological Exposure Indices:	NE		
11.9	Physician Recommendations:	Treat symptomatically.		

12. ECOLOGICAL INFORMATION

12.1	Environmental Stability:	This product will slowly corrode in soil.
12.2	Effects on Plants & Animals:	There are no specific data available for this product.
12.3	Effects on Aquatic Life:	Releases of large volumes of this product are not expected to be harmful or fatal to overexposed aquatic life

13. DISPOSAL CONSIDERATIONS


13.1	Waste Disposal:	Waste disposal must be in accordance with appropriate Federal, state, and local regulations.
13.2	Special Considerations:	NA

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>Zinc</u> and <u>Copper</u> , substances subject to SARA Title III, section 313 reporting requirements.	
15.2	SARA Threshold Planning Quantity:	There are no specific Threshold Planning Quantities for the components of this product.	
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory or are otherwise exempt.	
15.4	CERCLA Reportable Quantity (RQ):	<u>Zinc</u> : 454 kg (1,000 lbs)	
15.5	Other Federal Requirements:	This material does not contain any hazardous air pollutants. <u>Zinc</u> (and its compounds) and <u>Copper</u> are listed as Priority Pollutants under the Clean Water Act (CWA). <u>Zinc</u> (and its compounds) is listed as a Toxic Pollutant under the CWA. This product does not contain any Class 1 or Class 2 ozone depleters.	
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDL. The following chemicals are listed on the Ingredient Disclosure List: Chromium, Manganese, and Molybdenum. WHMIS Classification: D2B (Other Toxic Effects).	
15.7	State Regulatory Information:	<u>Zinc</u> is found on the following state criteria lists: IL, MA, NJ, and PA. <u>Aluminum</u> is found on the following state criteria lists: MA, MN, NJ and PA. <u>Magnesium</u> is found on the following state criteria list: FL, MA and PA. <u>Copper</u> is found on the following state criteria lists: FL, MA, MI, 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. REGULATORY INFORMATION – cont'd

15.8	Other Requirements:	The primary components of this product are not listed in Annex I of EU Directive 67/548/EEC: Harmful (Xn). <u>Risk Phrases</u> (R): 9-20-24/25 - Use only in well ventilated areas. Harmful by inhalation. Avoid contact with skin and eyes. <u>Safety Phrases</u> (S): 22-36/37/39-38-51 - Do not breathe gas/fumes/spray. Wear suitable protective clothing, gloves and eye/face protection. In case of insufficient ventilation wear suitable respiratory equipment. Use only in well-ventilated areas.	
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16. OTHER INFORMATION

16.1	Other Information:	<p>WARNING! CAUSES SERIOUS EYE IRRITATION. MAY CAUSE RESPIRATORY IRRITATION. Avoid breathing dust/fume. Wash hands and exposed skin areas with soap and warm water thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. If eye irritation persists: Get medical advice/attention. Collect spillage.</p> <p>NOTE: Local ventilation should be used during handling and use. Good housekeeping and personal hygiene are recommended. Some individuals may show sensitivity to exposure. Failure to observe proper practices may be hazardous to health. Use only in well-ventilated areas. Harmful by inhalation. Avoid contact with skin and eyes. Do not breathe gas, fumes, vapor or spray. Wear suitable protective clothing, gloves and eye/face protection. In case of insufficient ventilation wear suitable respiratory protective equipment. Avoid overexposure to metal fumes, powders and particulates.</p> <p>WARNING: Electric shock from welding equipment or electrodes may be fatal. The welding process uses electrical circuits that sustain a welding arc between the electrode and the base plate. The welding arc converts the electrical energy into a localized, concentrated heat source. The tremendously high temperatures of the arc cause the welding continuous wire and rod electrode (or filler metal, when used as such) to decompose. Electric arc working may create one or more health hazards. Hot metal spatter and heat from electric arcs, welding flames or the thermal spray process may cause burns to the hands and body or may cause fire if it comes into contact with combustible materials. UV, IR and light radiation from an electric arc may cause damage to unprotected eyes. Wear suitable protective equipment. Fumes and gases generated during the welding process can be harmful to your health and noise generated during welding can damage hearing. See also American National Standard Z-49.1, "Safety in Welding, Cutting and Allied Processes" published by the American Welding Society for additional safety precautions and hazard warnings.</p> <p>NOTE: This product contains a substance(s) known to the State of California to cause cancer, birth defects or other reproductive harm.</p>	
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.	
16.3	Disclaimer:	This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & Harbor Freight Tools USA, Inc.'s knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.	
16.4	Prepared for:	Harbor Freight Tools USA, Inc. 26541 Agoura Road Calabasas, CA 91302 USA Tel: +1 (805) 388-1000 http://www.harborfreight.com/	
16.5	Prepared by:	ShipMate, Inc. P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 http://www.shipmate.com	

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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
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EXPOSURE LIMITS IN AIR:

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

FIRST AID MEASURES:

CPR	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.
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HMIS-III 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:

A		G																									
B		H																									
C		I																									
D		J																									
E		K																									
F		X	Consult your supervisor or SOPs for special handling directions.																								
<table><tr><td></td><td></td><td></td><td></td></tr><tr><td>Safety Glasses</td><td>Splash Goggles</td><td>Face Shield & Protective Eyewear</td><td>Gloves</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>Boots</td><td>Synthetic Apron</td><td>Protective Clothing & Full Suit</td><td>Dust Respirator</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>Full Face Respirator</td><td>Dust & Vapor Half-Mask Respirator</td><td>Full Face Respirator</td><td>Airline Hood/Mask or SCBA</td></tr></table>								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
Safety Glasses	Splash Goggles	Face Shield & Protective Eyewear	Gloves																								
Boots	Synthetic Apron	Protective Clothing & Full Suit	Dust Respirator																								
Full Face Respirator	Dust & Vapor Half-Mask Respirator	Full Face Respirator	Airline Hood/Mask or SCBA																								

OTHER STANDARD ABBREVIATIONS:

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

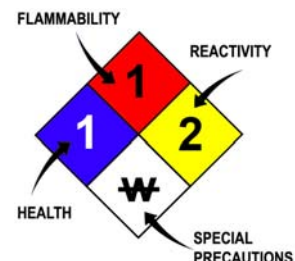
NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:

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

HAZARD RATINGS:

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



TOXICOLOGICAL INFORMATION:

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 ₀₁	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD ₀₁ , LD ₀₁ , & LD ₅₀ or TC, TC ₀₁ , LC ₀₁ , & LC ₅₀	Lowest dose (or concentration) to cause lethal or toxic effects
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL _m	Median threshold limit
log K _{OW} or log K _{OC}	Coefficient of Oil/Water Distribution

REGULATORY INFORMATION:

WHMIS	Canadian Workplace Hazardous Material Information System
DOT	U.S. Department of Transportation
TC	Transport Canada
EPA	U.S. Environmental Protection Agency
DSL	Canadian Domestic Substance List
NOHSC	National Occupational Health and Safety Commission (Australia)
NDSL	Canadian Non-Domestic Substance List
PSL	Canadian Priority Substances List
TSCA	U.S. Toxic Substance Control Act
EU	European Union (European Union Directive 67/548/EEC)
WGK	Wassergefährdungsklassen (German Water Hazard Class)
HMIS-III	National Paint & Coatings Association Hazardous Materials Identification System

WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:

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

EC (67/548/EEC) INFORMATION:

C	E	F	N	O	T	Xi	Xn
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

CLP/GHS (1272/2008/EC) PICTOGRAMS:

GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environment