

SAFETY DATA SHEET

Page 1 of 7 HFT-61271

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

SDS Revision: 1.0

SDS Revision Date: 4/30/2015

	I. FRODUCT & COMPANY IDENTIFICATION					
1.1	Product Name:	AA ALKALINE BATTERIES				
1.2	Chemical Name:	Alkaline Battery				
1.3	Synonyms:	P/N 61271				
1.4	Trade Names:	Thunderbolt Magnum				
1.5	Product Uses & Restrictions:	Electric Storage Battery				
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: This product is classified as a hazardous substance and as dangerous goods according to the classification criteria of [NOHSC: 1088 (2004)] and ADG Code (Australia).

WARNING! HARMFUL IF SWALLOWED. TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

<u>Hazard Statements</u> (H): H302 – Harmful if swallowed. H411 – Toxic to aquatic life with long lasting effects.

<u>Precautionary Statements</u> (P): P264 – Wash hands and exposed skin areas with soap and warm water thoroughly after handling. P270 – Do not eat, drink or smoke while sing this product. P273 – Avoid release to the environment. P280 – Wear protective gloves/eye protection. P301+P312 – IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. P330 – Rinse mouth. P391 – Collect spillage. P501 – Dispose of contents/container to licenses treatment, storage and disposal facility (TSDF).

<u>IF INGESTED</u>: Call the NATIONAL BATTERY INGESTION HOTLINE at +1 (202) 625-3333 collect, day or night. In Canada, call +1 (416) 813-5900.



3. COMPOSITION & INGREDIENT INFORMATION

	J. U	JIVIFUSITI	IOIY & IIY			1141	OIVI		IOI				
					EXPOSURE LIMITS IN AIR (mg/m³)								
					AC	GIH		NOHSC			OSHA		
					pp	pm		ppm			ppm		
CHEMICAL MANE(C)	CAS No.	RTECS No.	EINECS No.	%	TLV	STEL	ES- TWA	ES-	ES- PEAK	PEL	STEL	IDLH	OTHER
CHEMICAL NAME(S)		OP0350000		20-60				NF	NF				UIHEK
MANGANESE DIOXIDE	1313-13-9		215-202-6		(5)	NA	(5)	INF	INF	(5)	NA	NA	
		al 4; Acute Tox. I			(=)				.	(40)			la = 1110011
IRON (STEEL)	7439-89-6	NO4565500	231-096-4	10-20	(5)	NA	NF	NF	NF	(10)	NA	NA	0.5 – NIOSH
		; Skin Corr. 1A; I											1
ZINC	7440-66-6	ZG8600000	231-175-3	10-20	NA	NA	NF	NF	NF	NA	NA	NA	
		1; Aquatic Chror											
WATER	7732-18-5	ZC0110000	231-791-2	10-20	NA	NA	NF	NF	NF	NA	NA	NA	
WATER													
POTASSIUM HYDROXIDE	1310-58-3	TT2100000	215-181-3	5-10	NA	NA	(2)	NF	NF	NA	NA	NA	
POTASSION HTDROXIDE	Acute Tox. Or	Acute Tox. Oral 4; Acute Tox. Inh. 4; H302, H332											
CDADUITE	7782-42-5	MD9659600	231-955-3	1-5	(2.0)	NA	(2.0)	NF	NF	(5)*	NA	NA	RESP FRAC
GRAPHITE													
PD 100	12597-71-6	NA	NA	1-5	(1)	NA	NF	NF	NF	(1)	NA	NA	
BRASS													
NOVE	7440-02-0	QR5950000	231-111-4	0.1-1	(1.5)	NA	(1)	NF	NA	NA	NA	(10)	
NICKEL	Carc. 2; STOT	Carc. 2; STOT RE 1; Skin Sens. 1; Aquatic Chronic 3; H351, H372**, H317, H412											
	7439-92-1	OF7525000	231-100-4	< 0.0030	(0.05)	NA	NF	(0.15)	NF	NA	100	NA	
LEAD	Acute Tox. 4:	Acute Tox. 4; Acute Tox. 4; Repr. 1A; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H332, H360, H373, H400, H410											
	7440-43-9	NA	231-152-8	< 0.0003			NF	NF	NF	(0.1)			(0.02) RESP FRAC
CADMIUM		Muta. 2; Carc. 1E					hronic 1	I: H330	. H341.				
	7439-97-6	OV4550000	231-106-7	< 0.0001						NA	NA	(10)	
MERCURY		7439-97-6 OV4550000 231-106-7 < 0.0001 NA NA (0.003)(0.025) NA NA NA (10) Repr. 1B; Acute Tox. 2 *; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1; H360D***, H330, H372**, H400, H410											
	7440-38-2	CG0525000	231-148-6	< 0.0001		NA		(0.05)				5	
ARSENIC		; Acute Tox. 3 *;						(/		(0.002	I INC	J	<u>l</u>
	Acute 10x. 5	, Acute TOX. 5 ,	Aqualic Acule 1,	Aqualic Ci	ii Oi iiC I	, 11331,	11001,	11700, 1	1710				



Page 2 of 7

SAFETY DATA SHEET HARBOR FREIGHT TOOLS HFT-61271 Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards SDS Revision: 1.0 SDS Revision Date: 4/30/2015 4. FIRST AID MEASURES 4 1 First Aid: Give large quantities of water, but do NOT induce vomiting. Never give anything by mouth to an Ingestion: unconscious person. Contact 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. If product gets in the eyes, flush eyes thoroughly with copious amounts of water for at least 15 minutes, Eyes: holding eyelid(s) open to ensure complete flushing. If the eyes or face become swollen during or following use, consult a physician or emergency room immediately. If an open battery cell: Remove contaminated clothing and wash affected areas with soap and water. If Skin: discomfort persists and/or the skin reaction worsens, contact a physician immediately. Do not wear contaminated clothing until after it has been properly cleaned. Remove victim to fresh air at once. Under extreme conditions, if breathing stops, perform artificial Inhalation: respiration. Seek immediate medical attention. 42 Effects of Exposure: May cause severe irritation of mouth, throat, esophagus, and stomach. Acute ingestion of zinc Ingestion: compounds may cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. Eyes: Severe irritation, burns, cornea damage, blindness. Lead compounds may cause irritation. Skin: Severe irritation, burns, and ulceration if open battery cell comes into contact with skin. Inhalation: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs. Severe discomfort, nausea, vomiting and headache. Harmful if swallowed. May cause corrosion and 4.3 Symptoms of Overexposure Ingestion: permanent tissue destruction of the esophagus and digestive tract. May cause irreversible eye injury. Contact with eyes may cause severe irritation, and possible eye burns. Eyes: Severe irritation, redness, and watering. Severe skin irritation, red, itching skin, burns and ulceration, if open battery cell comes into contact with Skin: Inhalation: May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Irritation may lead to chemical pneumonitis and pulmonary edema. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. Causes respiratory tract irritation with possible burns. 4.4 Acute Health Effects: Hazardous exposure can occur only when product is heated above the melting point, oxidized or otherwise processed or damaged to create dust, vapor, or fume. Chronic Health Effects: 4.5 Chronic exposure may cause effects similar to those of acute exposure. 4 6 Target Organs: Skin, Respiratory System, Central Nervous System (CNS) 47 Medical Conditions **HEALTH** 1 Aggravated by Exposure: **FLAMMABILITY** 0 PHYSICAL HAZARDS 0 PROTECTIVE EQUIPMENT X **EYES** SKIN **LUNGS** 5. FIREFIGHTING MEASURES Fire & Explosion Hazards: 5.1 This material can burn but will not readily ignite. However, if involved in a fire, this product may decompose at high temperatures to form toxic gases (e.g., CO, CO_x, Hydrocarbons). 52 Extinguishing Methods: CO₂, Dry Chemical, Alcohol foam, Dry Chemical. Use water spray to cool containers. 5.3 Firefighting Procedures: Use extinguishing media most appropriate for the surrounding fire. Do NOT get water inside containers. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply, or any natural waterway. Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. 6. ACCIDENTAL RELEASE MEASURES Spills Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment, including protective gloves and eyewear. Plastic or rubber gloves, respirator, eye/face protection and chemical-resistant apron may be required for clean-up of large spills. Small Spills: Wear appropriate protective equipment including gloves and protective eyewear. Use a non-combustible

material such as vermiculite or sand to soak up the product and place into a container for later disposal. Large Spills: Keep incompatible materials 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. Collect in acidresistant container.



9.14

9.15

9.16

9.17

Autoignition Temperature

Viscosity:

Other Information:

Decomposition Temperature:

NA

NA

NA

NA

SAFETY DATA SHEET

Page 3 of 7

HFT-61271 Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards SDS Revision: 1.0 SDS Revision Date: 4/30/2015 7. HANDLING & STORAGE INFORMATION Work & Hygiene Practices: Do not eat, drink or smoke when handling this product. Handle as to avoid puncturing container(s). 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. Keep away from incompatible substances. Protect containers from physical damage. Store product in wellfilled, appropriate coated and tightly closed containers avoiding influence of oxygen/air, light and humidity. Store at a cool and constant temperature. This battery is not designed for recharging. Recharging can cause battery leakage or high pressure rupture, in some 7.3 Special Precautions: cases. Inadvertent charging can happen if a battery is installed backwards. Accidental short circuit for a few seconds will not seriously affect the battery. But prolonged short circuit will cause the battery to lose energy, and can cause the safety release vent to open. Sources of short circuit include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries in devices. 8. EXPOSURE CONTROLS & PERSONAL PROTECTION ACGIH NOHSC OSHA OTHER **Exposure Limits:** ppm (mg/m³) ES-STEL **CHEMICAL NAME(S)** STEL **ES-TWA ES-PEAK** STEL TLV PEL **IDLH** MANGANESE DIOXIDE (5) NA (5) NF NF (5) NA NA RESP FRAC **GRAPHITE** (2.0)NA (2.0)NF NF (5)* NA NA POTASSIUM HYDROXIDE NA NA NF NF NA NA NA (2) IRON (STEEL) NF NF NF (10)NA 0.5 - NIOSH (5) NA NA LEAD NF (0.05)NF (0.15)NA 100 NA NA CADMIUM (0.01)NA NF NF NF (0.1) 0.3 (9) (0.02) RESP FRAC **MERCURY** NA NA (0.003)(0.025)NA NA NA (10)**ARSENIC** NA NF (0.05)NF (0.002)NA NA 8.2 Ventilation & Engineering General mechanical (e.g., fans) or natural ventilation is sufficient when this product is in use. Use local or general Controls 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) 8.3 Respiratory Protection: No special respiratory protection is required under typical circumstances of use or handling. In instances where mist or vapors 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 Eve 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. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). 8.5 Hand Protection: Where contact is likely, impervious gloves are recommended. Do not wear rings, watches or jewelry. When handling large quantities of fluid (e.g., ≥ 1 gallon (3.8 L)), wear corrosion-resistant gloves 8.6 Body Protection: No apron required when handling sealed undamaged battery. Where contact is likely, corrosionresistant apron, clothing and boots should be worn. Eye wash stations and deluge showers should be available. 9. PHYSICAL & CHEMICAL PROPERTIES Stainless steel top battery. Contents dark and gray in color. Appearance 9.2 Odor No apparent odor (sealed) 9.3 Odor Threshold: NA 9.4 NA 9.5 Melting Point/Freezing Point: NA Initial Boiling Point/Boiling 9.6 NA Range: 9.7 Flashpoint NA 9.8 Upper/Lower Flammability NA 9.9 Vapor Pressure: NA 9.10 Vapor Density: NA 9.11 Relative Density: NA Solubility 9.12 Sealed electric battery: Insoluble 9.13 Partition Coefficient (log Pow): NA



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

SAFETY DATA SHEET

SDS Revision: 1.0

Page 4 of 7 **HFT-61271**

SDS Revision Date: 4/30/2015

10. STABILITY & REACTIVITY 10.1 Stability: Stable under normal conditions; unstable with heat or contamination. 10.2 Hazardous Decomposition Oxides of carbon (CO, CO₂). Thermal degradation may produce hazardous fumes of zinc and manganese, hydrogen Products: gas, caustic vapors of potassium hydroxide and other hazardous by-products 10.3 Hazardous Polymerization: 10.4 Conditions to Avoid: Open flames, sparks, high heat, incompatible substances and direct sunlight, and incompatible substances. 10.5 Incompatible Substances: Avoid extreme heat and ignition sources. Store away from oxidizers. Do not exceed heat, crush, disassemble, shortcircuit or recharge. 11. TOXICOLOGICAL INFORMATION 11.1 Routes of Entry Ingestion: YFS 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: Manganese Dioxide: LD₅₀ (oral, rat): 3,478 mg/kg. 11.3 Acute Toxicity: See section 4.4 11 4 Chronic Toxicity See section 4.5 Nickel is listed as IARC Group 2B (Possibly carcinogenic to humans); NTP13 Group 1 (Known human carcinogen); 11.5 Suspected Carcinogen: CA65 (cancer). Lead is listed as ACGIH Group A3 (Confirmed animal carcinogen with unknown relevance to human): IARC Group 2B (Possibly carcinogenic to humans); NTP13 Group 2 (Reasonably Anticipated to be a Human Carcinogen); CA65 (cancer). Cadmium is listed as ACGIH Group A2 (Suspected human carcinogen); IARC Group 1 (Carcinogenic to humans); NTP13 Group 1 (Known human carcinogen); CA65 (cancer). Arsenic is listed as ACGIH Group A1 (Confirmed human carcinogen); IARC Group 1 (Carcinogenic to humans); NTP13 Group 1 (Known human carcinogen); CA65 (cancer). 11.6 Reproductive Toxicity: This product contains Lead, which is suspected of causing 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 contains Lead, which is suspected of causing reproductive toxicity in humans Irritancy of Product: 11.7 The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) upon prolonged or repeated exposure. 11.8 Biological Exposure Indices NA 119 Physician Recommendations: Treat symptomatically and supportively. 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: Mercury: LC₅₀ (Rainbow trout, 96h) = 0.16-0.90 mg/L; LC50 (Bluegill/Sunfish, 96h) = 0.16-0.90 mg/L; EC₅₀ (Daphnia Magna, 48h) = 0.01 mg/L 13. DISPOSAL CONSIDERATIONS Waste Disposal: 13.1 Dispose of in accordance with federal, state, provincial 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. 49 CFR (GND): 14.1 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**



SAFETY DATA SHEET

Page 5 of 7 **HFT-61271**

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, 2001/58 & 1272/2008/EC Standards SDS Revision: 1.0 SDS Revision Date: 4/30/2015

	1100 10 0011/1,7100,711101,11	Shoo, writing, 2001/30 & 1212/2000/E0 Standards				
		15. REGULATORY INFORMATION				
15.1	SARA Reporting Requirements:	This product contains Lead, Mercury, Zinc and Nickel, substances subject to SARA Title III, section 313 reporting				
15.2	SARA Threshold Planning Quantity:	requirements. 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	Zinc: 454 kg (1,000 lbs); Mercury: 0.454 kg (1.0 lbs); Nickel: 45.4 kg (100 lbs)				
15.5	(RQ): Other Federal Requirements:	Mercury, Lead, Cadmium and Nickel are listed as Hazardous Air Pollutants (HAPs) under the Clean Air Act (CAA). Zinc, Nickel, Cadmium, Arsenic and Mercury are listed as Priority Pollutants under the Clean Water Act (CWA). Zinc, Lead, Arsenic, Cadmium and Mercury are listed as Toxic Pollutants under the CWA. This product does not contain any Class 1 or Class 2 ozone depletors.				
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/NDSL. None of the components of this product are listed on the Priorities Substances List. WHMIS D2B (Other Toxic Effects)				
15.7	State Regulatory Information: Other Requirements:	Lead can be found on the following state criteria list: California Proposition 65 (CA65), 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), and Washington Permissible Exposures List (WA). Nickel is listed on the following state criteria lists: fl, MA, MI, MN, NJ, PA, and WA. Potassium Hydroxide is found on the following state criteria lists: FL, MA, MN, PA, and WA. Graphite is found on the following state criteria lists: FL, MA, MN, PA, and WA. Manganese Dioxide is found on the following state criteria lists: IL, MA, PA, and RI. Zinc is found on the following state criteria lists: FL, MA, MI, MN, NJ, PA, WA, and 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), Illinois Hazardous Substances List (IL), Massachusetts Hazardous Substances List (MA), Michigan Critical Substances List (MI), Minnesota Hazardous Substances List (MN), New Jersey Right-to-Know List (PA), Rhode Island Hazardous Substances List (RI), Washington Permissible Exposures List (WA), Wisconsin Hazardous Substances List (WI). WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires this warning be given to customers in the State of California. The primary component of this product is listed in Annex I of EU Directive 67/548/EEC: Harmful, Environmental Danger (Xn, N). Risk Phrases (R): 22-34-50/53 – Harmful if swallowed. Causes burns. Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment. Safety Phrases (S): 1/2-26-36/37/39-45-60-61 – Keep locked up and out of reach of				
		container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/SDS.				
	T	16. OTHER INFORMATION				
16.1	Other Information:	WARNING! HARMFUL IF SWALLOWED. TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS. Wash hands and exposed skin areas with soap and warm water thoroughly after handling. Do not eat, drink or smoke while sing this product. Avoid release to the environment. P280 – Wear protective gloves/eye protection. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. Collect spillage. IF INGESTED: Call the NATIONAL BATTERY INGESTION HOTLINE at +1 (202) 625-3333 collect, day or night. In Canada, call +1 (416) 813-5900. KEEP 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 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/				

HARBOR FREIGHT TOOLS

Quality Tools at Ridiculously Low Prices

SAFETY DATA SHEET

Page 6 of 7 **HFT-61271**

SAFETY DATA SHEET

Page 7 of 7 **HFT-61271**

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

SDS Revision: 1.0

SDS Revision Date: 4/30/2015

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

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:

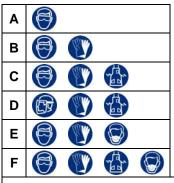
CPR	Cardiopulmonary resuscitation - method in which a person whose heart has
	stopped receives manual chest compressions and breathing to circulate blood
	and provide oxygen to the body.

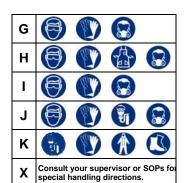
HMIS-III HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

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



PERSONAL PROTECTION RATINGS:























Dust & Vapor Half-Mask Respirator

Full Face Respirator

Airline Hood/Mask or SCBA

OTHER STANDARD ABBREVIATIONS:

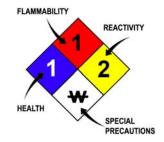
ML	Maximum Limit	
mg/m3	milligrams per cubic meter	
NA Not Available		
ND	Not Determined	
NE	Not Established	
NF	Not Found	
NR	No Results	
ppm	parts per million	
SCBA	Self-Contained Breathing Apparatus	

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:					
Autoignition					
Temperature	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
₩	Use No Water
ОХ	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 _{io}	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD _{Io} , LD _{Io} , & LD _o or	Lowest dose (or concentration) to cause lethal or toxic effects
TC, TC _o , LC _{io} , & LC _o	
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:

	*	(\odot	(18)		
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:

		*	*		®	×	×
С	E	F	N	0	Т	Xi	Xn
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful

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

			\Diamond			\limits	***	
GHS01	GHS02	GHS03	GHS04	GHS05	GHS06	GHS07	GHS08	GHS09
Explosive	Flammable	Oxidizer	Pressurized	Corrosive	Toxic	Harmful Irritating	Health Hazard	Environ- ment