



## 1. PRODUCT IDENTIFICATION

1.1	Product Name: <b>ACETONE #1801, #1961, #3961</b>
1.2	Chemical Name: <b>2-Propanone</b>
1.3	Synonyms: <b>Beta-Ketopropane, Dimethyl Formaldehyde, Dimethyl Ketone, Dimethylketal, DMK, Keto Propane, Methyl Ketone, Pyroacetic Acid, Pyroacetic Ether, Pyroacetic Spirit</b>
1.4	Identified Uses: <b>Solvent, Cleaning Product</b>
1.5	Grade: <b>1801 - Technical Grade, 1961 - Electronic/Semiconductor Grade, 3961 - ACS Reagent Grade</b>
1.6	Distributor's Name: <b>Stericycle Environmental Solutions</b>
1.7	Distributor's Address: <b>425 Isis Avenue Inglewood, California 90301</b>
1.8	Emergency Phone: <b>877-577-2669</b>
1.9	Business Phone: <b>323-776-6233</b>

## 2. HAZARD IDENTIFICATION

2.1	Hazard Identification:  <b>Warning! Flammable liquid and vapor. May affect the central nervous system causing dizziness, headache or nausea. May cause eye irritation. Prolonged or repeated contact may dry the skin and cause irritation.</b>  <b>HAZARD STATEMENTS (H):</b> H225 - Highly flammable liquid and vapor H319 - Causes serious eye irritation H336 - May cause drowsiness or dizziness  <b>PRECAUTIONARY STATEMENTS (P):</b>  <b>Prevention:</b> P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking P233 - Keep container tightly closed P240 - Ground and bond container and receiving equipment P241 - Use explosion-proof electrical, lighting, ventilating equipment P242 - Use only non-sparking tools P243 - Take precautionary measures against static discharge P261 - Avoid breathing mist, spray, vapors P264 - Wash exposed skin thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P280 - Wear eye protection, face protection, protective clothing, protective gloves	Signal Word: <b>DANGER</b>   GHS02   GHS07
2.1	<b>Response:</b> P303+P361+P353 - IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water	

2.1	<p><b>P304+P340+P312 - IF INHALED:</b> Remove victim to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell</p> <p><b>P305+P351+P338 - If in eyes:</b> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing</p> <p><b>P337+P313 - If eye irritation persists,</b> get medical advice/attention</p> <p><b>P370+P378 - In case of fire:</b> Use dry sand, dry chemical or alcohol resistant foam to extinguish</p> <p><b>Storage:</b></p> <p><b>P403+P233 - Store in a well-ventilated place. Keep container tightly closed</b></p> <p><b>P403+P235 - Store in a well-ventilated place. Keep cool</b></p> <p><b>P405 - Store locked up</b></p> <p><b>Disposal:</b></p> <p><b>P501 - Dispose of contents/container in accordance with local, state, and federal regulations</b></p>											
2.2	<p>GHS Severity Classification:</p> <p><b>Flammable Liquid: 2 [H225]</b></p> <p><b>Eye Irritant: 2A [H319]</b></p> <p><b>Specific Target Organ Toxicity (single exposure) : 3 (Central Nervous System) [H336]</b></p>											
2.3	<p>HMIS Ratings:</p> <p><b>Hazardous Materials Identification System ratings</b></p> <p><b>Minimum Protective Equipment:</b></p> <p><b>Use safety glasses and chemical protective gloves</b></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #0000FF; color: white;"><b>HEALTH</b></td> <td style="width: 20px;"><b>2</b></td> </tr> <tr> <td style="background-color: #FF0000; color: white;"><b>FLAMMABILITY</b></td> <td><b>3</b></td> </tr> <tr> <td style="background-color: #FFA500;"><b>PHYSICAL HAZARDS</b></td> <td><b>0</b></td> </tr> <tr> <td style="background-color: #FFFFFF;"><b>PROTECTIVE EQUIPMENT</b></td> <td><b>B</b></td> </tr> <tr> <td style="background-color: #FFFFFF;"><i>Safety Glasses</i></td> <td style="background-color: #FFFFFF;"><i>Gloves</i></td> </tr> </table>	<b>HEALTH</b>	<b>2</b>	<b>FLAMMABILITY</b>	<b>3</b>	<b>PHYSICAL HAZARDS</b>	<b>0</b>	<b>PROTECTIVE EQUIPMENT</b>	<b>B</b>	<i>Safety Glasses</i>	<i>Gloves</i>
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### 3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	EINECS No.	%	GHS Classifications
<b>ACETONE</b>	<b>67-64-1</b>	200-662-2	90-100	<i>Flammable Liquid 2 - H225: Eye Irritation 2A - H319: Specific Target Organ Toxicity (STOT) SE3 - H336</i>

### 4. FIRST AID MEASURES

4.1	First Aid:	<p><b>Move individual out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.</b></p>
	INHALATION:	<p><b>Immediately move individual away from exposure and into fresh air. If breathing is difficult, administer oxygen and seek immediate medical attention. Perform artificial respiration if breathing has stopped. Keep individual warm and quiet. If symptoms persist, seek medical attention.</b></p>
	SKIN:	<p><b>Remove contaminated clothing immediately, wash before reuse. Exposed areas should be cleaned by washing with soap and copious amounts of water. If irritation persists, consult a physician.</b></p>
	EYES:	<p><b>Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.</b></p>

4.1	INGESTION:	<b>Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Do not induce vomiting without medical advice. Contact a physician, medical facility, or poison control center for advice.</b>
4.2	Medical Conditions Aggravated by Exposure:	<b>Not Listed.</b>
4.3	Notes To Physician:	<b>Not Listed.</b>

## 5 FIREFIGHTING MEASURES

5.1	Flashpoint & Method:	<b>0°F / -18°C (IP 170)</b>
5.2	Autoignition Temperature:	<b>540°C / 1004°F</b>
5.3	Flammability Limits:	<b>Lower Explosive Limit: 2.1% (V) Upper Explosive Limit: 13.0% (V)</b>
5.4	Extinguishing Methods:	<b>Extinguish with alcohol resistant foam, carbon dioxide, inert gas (nitrogen) or dry chemical. Do not use high volume water jet which may spread flames. Product will float on top of water and spread or reignite.</b>
5.5	Fire & Explosion Hazards:	<b>This material can release vapors at or below ambient temperatures. Containers exposed to intense heat from fires should be cooled with water or CO2 extinguisher to prevent vapor pressure build up, which could cause container rupture. Containers should also be cooled to prevent weakening of container structures. Vapors are heavier than air and can accumulate and spread and cause flash fires. Vapors may settle into low lying areas, sumps, or pits. Never perform any spark emitting processes such as welding or cutting on or near empty containers and residues.</b>
5.6	Firefighting Procedures:	<p><b>Warn all personnel of potential hazards and evacuate if necessary. Do not fight fires unless properly trained for chemical fires. Self contained breathing apparatus and full protective clothing must be worn in case of fire. Take precautionary measures against static discharges. Ground container and transfer equipment to eliminate static electric sparks. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading material with water used for cooling.</b></p> <p><b>Heat may build enough pressure to rupture closed containers/spreading fire/increasing risk of burns/injuries. Cool containers with flooding quantities of water until well after fire is out. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.</b></p>



## 6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	<b>Warn all personnel of potential hazards and evacuate if needed. Assure adequate ventilation and prohibit breathing vapors. Water fog or foam may be helpful in suppressing vapors. Eliminate all potential sources of ignition. Ground handling equipment and use non-sparking tools. Follow precautions for safe handling described in this Safety Data Sheet. Only trained personnel can clean-up spills. Wear protective gloves, clothing and safety glasses; goggles or face shield in case of splash. Use proper respiratory protective equipment to assure no hazardous exposures.</b>
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6.2	Environmental Precautions: <b>Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.</b>
6.3	Spill Clean Up Methods: <b>Wear necessary personal protective equipment. Remove sources of ignition. Dam spill materials with sand, earth, diatomaceous earth, vermiculite, or any compatible, non-combustible absorbent material. Shovel into dry, DOT approved, labeled, containers. Close containers securely and move from area. Flush area with water. Capture rinseates for proper disposal. Absorb spilled liquid with polypads or other suitable absorbent materials. Capture soiled spill materials for proper disposal. Spill trained personnel only.</b>
6.4	Reference To Other Sections: <b>Wear protective clothing as described in Section 8 of this safety data sheet. See section 11 for additional information on health hazards. For waste disposal, see section 13.</b>

## 7. HANDLING AND STORAGE INFORMATION

7.1	Work & Hygiene Practices: <b>Observe good chemical hygiene practices. Do not eat, drink or smoke when handling this product. Avoid inhalation of vapors or spray mists. Wear chemical resistant gloves and safety glasses and chemical goggles if eye contact is possible. Wash unintentional residues with soap and warm water. Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.</b>
7.2	Storage and Handling: <b>No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.</b>  <b>Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Container may be opened only under exhaust ventilation hood. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.</b>
7.3	Special Precautions: <b>Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.</b>

## 8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Exposure Limits:							
			ACGIH			OSHA (Calif)		
CHEMICAL NAME(S)	CAS No.	%	TLV/TWA	STEL	IDLH	PEL	STEL	PEL-C
<b>ACETONE</b>	<b>67-64-1</b>	90-100	250 ppm	500 ppm	2500 ppm	500 ppm (1200 mg/m <sup>3</sup> )	750 ppm (1780 m/m <sup>3</sup> )	3000 ppm
8.2	Ventilation and Engineering Controls: <b>Always assure ventilation adequate to prevent inhalation of vapors or spray mists, and to prevent flammable vapor build up. Must not be handled in confined space without sufficient ventilation. Maintain workplace vapor concentrations below the occupational exposure limits. Observe good chemical hygiene practices. Do not eat, drink or smoke when handling this product.</b>							

8.3	Respiratory Protection: <b>General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.</b>	 Safety Glasses S0227   Hand Protection S0230
8.4	Eye Protection: <b>Eye wash bottle with pure water. Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems.</b>	
8.5	Hand Protection: <b>Chemical resistant gloves are required for use, especially for prolonged or repeated contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.</b>	
8.6	Body Protection: <b>Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.</b>	

## 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1	Appearance:	Clear, colorless liquid
9.2	Odor:	Sweet, aromatic
9.3	Odor Threshold:	62 ppm
9.4	pH:	7 @ 20 - 25 °C (68 - 77 °F)
9.5	Melting Point / Freezing Point:	-95.35 to -93.9 °C (-139.63 to -137.0 °F)
9.6	Initial Boiling Point and Boiling Range:	56 - 56.05 °C (133 - 132.89 °F)
9.7	Flashpoint:	-18 to -17 °C (-0.40 to 1 °F) Method: closed cup
9.8	Evaporation Rate:	5.6 – 6.06 (n-Butyl Acetate = 1)
9.9	Flammability:	Not Listed
9.10	Lower/Upper Flammability Limit:	2.5% / 14.3%
9.11	Vapor Pressure:	180 - 185 mmHg @ 20 - 25 °C (68 - 77 °F)
9.12	Vapor Density:	> 2 @ 20 - 25 °C (68 - 77 °F) (Air = 1.0)
9.13	Relative Density:	0.786 - 0.792 @ 20 - 25 °C (68 - 77 °F) Reference substance: (water = 1)
9.14	Water Solubility:	Completely miscible @ 20 °C (68 °F)
9.15	Partition Coefficient: n-octanol/Water:	log Pow: -0.24 to -0.23
9.16	Autoigniton Temperature:	Not Listed
9.17	Decomposition Temperature:	Not Listed
9.18	Viscosity:	0.32 - 0.33 mPa.s @ 20 °C (68 °F) Dynamic 0.38 mm <sup>2</sup> /s @ 40 °C (104 °F) Kinematic

9.19	% Volatility:	<b>Not listed</b>
9.20	VOC Content:	<b>0 Grams/Liter (exempt compound; not photo-chemically reactive)</b>
9.21	Surface Tension:	<b>22.8 mN/m</b>

## 10. STABILITY AND REACTIVITY

10.1	Reactivity: <b>No dangerous reaction known under conditions of normal use. Vapors may form explosive mixture with air.</b>
10.2	Stability: <b>Stable under normal conditions.</b>
10.3	Hazardous Polymerization: <b>Not Listed.</b>
10.4	Conditions To Avoid: <b>Keep away from heat, flame, sparks and other ignition sources. Do not pressurize, cut, weld, braze, solder, drill, grind or ex-pose containers to heat or sources of ignition.</b>
10.5	Incompatible Substances: <b>Rubber, Plastics, Bases, Oxidizing agents, Amines.</b>
10.6	Hazardous Decomposition Products: <b>Carbon oxides.</b>

## 11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: <b>YES</b>	Absorption: <b>NO</b>	Ingestion: <b>NO</b>
11.2	Effects of Exposure:			
	INHALATION:	<b>Vapors from this chemical can be hazardous when inhaled and are moderately toxic. Vapors may irritate nose, throat and respiratory system.</b>		
	SKIN:	<b>Unlikely to cause skin irritation of injury. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and during and cracking of skin, burns, and other skin damage.</b>		
	EYES:	<b>Can cause eye irritation. Symptoms include, stinging, tearing, redness, and swelling of eyes.</b>		
	INGESTION:	<b>Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.</b>		
11.3	Symptoms of Overexposure: <b>Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.</b>			
11.4	Acute Health Effects:			
	INHALATION:	<b>Not Listed.</b>		
	SKIN:	<b>Not Listed.</b>		
	EYES:	<b>Not Listed.</b>		
	INGESTION:	<b>Not Listed.</b>		

11.5	Chronic Health Effects:	
	INHALATION:	<b>Not Listed.</b>
	SKIN:	<b>Not Listed.</b>
	EYES:	<b>Not Listed.</b>
	INGESTION:	<b>Not Listed.</b>
11.6	Toxicity Data: <ul style="list-style-type: none"> <li>Irritating to eyes, (rabbit) [Exposure time: 24 hr]</li> </ul> <b>CHRONIC: Carcinogenicity: Not listed as IARC, NTP, OSHA or Proposition 65 carcinogen.</b>	
11.7	Target Organs: <b>Central Nervous System. May cause drowsiness or dizziness. The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.</b>	


## 12. ECOLOGICAL INFORMATION

12.1	Ecotoxicity: <b>No data available.</b>
12.2	Degradability: <b>No data available.</b>
12.3	Bioaccumulative Potential: <b>No data available.</b>
12.4	Mobility: <b>No data available.</b>
12.5	Results of PBT and vPvB Assessment: <b>No data available.</b>
12.6	Other Adverse Effectes: <b>Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances.</b> <b>Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).</b>

## 13. DISPOSAL CONSIDERATIONS

13.1	Waste Disposal: <b>Waste materials are classified as hazardous waste. Hazardous wastes with a flash point &lt;140°F (60°C) are considered ignitable and carry a RCRA code of D001 (40 CFR §261.21) Spent Acetone as a non-halogenated solvent carries a RCRA code of F003. Acetone as a discarded commercial chemical product, off-specification species, container residue, or spill residue carries a RCRA code of U002. Package, store, transport, and dispose of all wastes, clean-up materials and contaminated equipment in accordance with all applicable federal, state, and local health and environmental regulations. Shipments of waste materials are subject to manifesting requirements per applicable regulations. Appropriate disposal depends on the nature of each waste material and determinations should be performed by competent and properly trained personnel.</b>
13.2	Special Considerations: <b>Empty remaining contents and unused products. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.</b>

## 14. TRANSPORTATION INFORMATION

14.1	US DOT Proper Shipping Name: <b>Acetone</b> US DOT ID Number: <b>UN1090</b> US DOT Hazard Class: <b>3</b> Packing Group: <b>II</b> <i>Emergency Response Guidebook (ERG) Guide No. 127</i>	
14.2	49 CFR Department of Transportation (Ground): <b>UN1090, Acetone, 3, PGII</b>	
14.3	IATA (Air): <b>UN1090, Acetone, 3, PGII</b>	
14.4	TDGR (Canadian Ground): <b>UN1090, ACETONE, 3, PGII</b>	
14.5	Special Considerations: <b>WHMIS Classification:</b> <b>B2: Flammable liquid, D2B: Toxic Material Causing Other Toxic Effects</b>  <b>IMDG (International Maritime Dangerous Goods):</b> <b>UN1090, ACETONE, 3, II, Flash Point: -18 to -17 °C (-0.40 to 1 °F)</b> Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. <b>5000 lbs / 2272 kg, [759 gal / 2873 L]</b>	
14.6	Notifications: <b>All ingredients are on the following inventories or are exempted from listing:</b>	
	<b>Country</b>	<b>Notification</b>
	Australia	AICS
	Canada	DSL
	China	IECS
	European Union	EINECS
	Japan	ENCS/ISHL
	Korea	ECL
	New Zealand	NZIoC
	Philippines	PICCS

## 15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements: <b>Chemicals in this product are subject to the reporting requirements of SARA Title III, Section 311/312:</b> <ul style="list-style-type: none"> <li>• <b>Acetone (67-64-1): SARA Hazard Categories: H1 - Acute Health Hazard, P3 - Fire Hazard</b></li> </ul> <b>This product does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.</b>
15.2	SARA 302 Threshold Planning Quantity: <b>None</b>



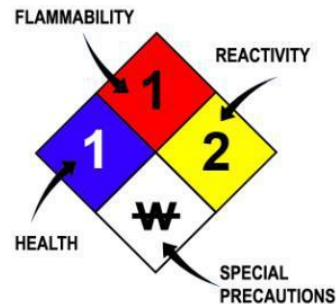
15.3	TSCA Inventory Status: <b>All components of this product are listed in the TSCA Inventory or are exempt.</b>
15.4	CERCLA Reportable Quantity (RQ): <b>Acetone (67-64-1): 5000 Lbs, Benzene (71-43-2): 10 lbs</b>
15.5	Other Federal Requirements: <b>SARA 304 Extremely Hazardous Substances Reportable Quantity:</b> <b>This material does not contain any components with a section 304 EHS RQ.</b>  <b>Clean Air Act:</b> This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61). This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F). The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.48): <b>Acetone (67-64-1)</b>  <b>Clean Water Act:</b> The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 116.4A and Section 117.3A: <b>Benzene: (71-43-2)**</b>  <b>This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307.</b>
15.6	State Requirements: <b>California Safe Drinking Water and Toxics Enforcement Act (Prop 65) - This product may contain trace amounts of a chemical known to the State of California to cause cancer, birth defects, or reproductive harm: Benzene (71-43-2)**</b>  <b>Components of this product are covered under specific State Regulations, Right To Know, Hazardous Chemicals, or Hazardous Substances Lists:</b> <ul style="list-style-type: none"> <li>• Acetone (67-64-1): AK, FL, IL, KS, MA, MN, MO, ND, NJ, PA, RI, TX, WV</li> <li>• Benzene** (71-43-2): AK, FL, IL, KS, MA, MI, MN, MO, ND, NJ, NY, PA, RI, TX, WV</li> </ul> <b>** Other substances in the product which may present a health or environmental hazard.</b>

## 16. OTHER INFORMATION

16.1	Other Information: <b>This Safety Data Sheet supersedes earlier versions.</b>  <b>Impurities found in this chemical which comprise less than 1% (0.1% for carcinogens) of this mixture, for which there is no evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health risk to employees, are not reported. (29 CFR, 1910.120 (g)(2)(i)(C)(2))</b>
16.2	Terms and Definitions: <b>See last page of this Safety Data Sheet.</b>
16.3	Technical Contact: <b>Customer Service 323-776-6233.</b>
16.4	Disclaimer: <b>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 Stericycle Environmental Solution's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are 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.</b>

**NFPA (NATIONAL FIRE PREVENTION AGENCY) HAZARD RATINGS:**

#	GENERAL	HEALTH	FLAMMABILITY	REACTIVITY	ACD	Acidic
4	Extreme Hazard	Too Dangerous To Enter Vapor Or Liquid	Extremely Flammable FP= <73°C	May Detonate - Vacate Area If Materials Are Exposed To Fire	ALK	Alkaline
3	Severe Hazard	Extremely Dangerous Use Full Protective Clothing	Ignites At Normal temperatures FP= <120°C	Strong Shock Or Heat May Detonate - Use Monitors From Behind Explosive Resistant Barriers	COR	Corrosive
2	Moderate Hazard	Hazardous - Use Breathing Apparatus	Ignites When Moderately Heated FP= <220°C	Violent Chemical Change Possible - Use Hose Streams From Distance	W	Use No Water
1	Slight Hazard	Slightly Hazardous	Must Be Preheated To Burn FP= >220°C	Unstable If Heated - Use Normal Precautions	OX	Oxidizer
0	Minimal Hazard	Like Ordinary Material	Will Not Burn	Normally Stable		Radioactive



**OTHER STANDARD ABBREVIATIONS:**

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
Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition
Flashpoint	The temperature at which a compound gives off sufficient vapor to ignite in air with an ignition source

**TOXICOLOGICAL INFORMATION:**

LD <sub>50</sub>	Lethal Dose (solids & liquids) which kills 50% of the exposed test population
LC <sub>50</sub>	Lethal concentration (gases) which kills 50% of the exposed test population
ppm	Concentration expressed in parts of material per million parts
TD <sub>10</sub>	Lowest dose to cause a symptom
TCLO	Lowest concentration to cause a symptom
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL <sub>m</sub>	Median threshold limit

## HAZARDOUS MATERIAL IDENTIFICATION GUIDE

HEALTH	D	4 EXTREME	HAZARD RATING INDEX 4 = Toxic Class T 3 = Corrosive Class C.R. 2 = Harmful Class X 1 = Irritant Class A 0 = No Hazard to Health 4 = Flammable below 21°C 3 = Flammable between 21°C and 55°C 2 = Flammable between 55°C and 100°C 1 = Catches light > 100°C 0 = Not flammable 4 = Very serious hazard: Material explodes easily under pressure and normal temperature 3 = Serious hazard: Material liable to explode, but only with a strong initiating source. Explodes when in contact with water. 2 = Moderate hazard: Will readily undergo violent chemical change (does not explode) or will react violently with water. 1 = Low hazard: Unstable under high temperature or pressure, or it can react with water, but not violently. 0 = Material stable in a fire and does not react with water
FLAMMABILITY	E	3 SERIOUS	
REACTIVITY	G	2 MODERATE	
PROTECTIVE EQUIPMENT	R	1 SLIGHT	
PROTECTIVE EQUIPMENT INDEX			
A	M	0 MINIMAL	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  Safety Glasses                 </div> <div style="text-align: center;">  Gloves                 </div> <div style="text-align: center;">  Synthetic Apron                 </div> <div style="text-align: center;">  Face Shield                 </div> <div style="text-align: center;">  Dust Respirator                 </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="text-align: center;">  Vapour Respirator                 </div> <div style="text-align: center;">  Splash Goggles                 </div> <div style="text-align: center;">  Airline Hood or Mask                 </div> <div style="text-align: center;">  Full Protective Suit                 </div> <div style="text-align: center;">  Boots                 </div> <div style="text-align: center;">  Combination Dust &amp; Vapor Respirator                 </div> </div>
B	N	1	
C	P	2	
D	Q	3	
E	R	4	
F	S	5	
G	T	6	
H	U	7	
I	V	8	
J	W	9	
K	X	10	
L	Y	11	

**TERMS:**

NA	Not Available	ND	Not Determined
NE	Not Established	NL	Not Listed
NR	No Results	ML	Maximum Limit

**AGENCIES:**

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

## GHS Pictograms

 <b>EXPLODING BOMB</b> • Explosives • Self-Reactives • Organic Peroxides GHS01-EXPLOSIVE	 <b>FLAME</b> • Flammables • Emits Flammable Gas • Pyrophorics • Self-Reactives • Self-Heating • Organic Peroxides GHS02-FLAMMABLE	 <b>FLAME OVER CIRCLE</b> • Oxidizers GHS03-OXIDIZER
 <b>GAS CYLINDER</b> • Gases Under Pressure GHS04-PRESSURE	 <b>CORROSION</b> • Skin Corrosion/Burns • Eye Damage • Corrosive to Metals GHS05-CORROSIVE	 <b>SKULLS &amp; CROSSBONES</b> • Acute Toxicity (fatal or toxic) GHS06-TOXIC
 <b>EXCLAMATION MARK</b> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects GHS07-HARMFUL/IRRITATING	 <b>HEALTH HAZARDS</b> • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory) Carcinogen Mutagenicity Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity GHS08-HEALTH HAZARDS	 <b>ENVIRONMENT</b> • Acute Toxicity (fatal or toxic) GHS09-ENVIRONMENT