



# SAFETY DATA SHEET

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

SDS Revision: 1.1

SDS Revision Date: 11/29/2018

## 1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	<b>FIREARM CLEANER AEROSOL</b>
1.2	Chemical Name:	Aerosol
1.3	Synonyms:	16238
1.4	Trade Names:	Firearm Cleaner Aerosol
1.5	Product Use:	Firearm Cleaner
1.6	Distributor's Name:	Birchwood Casey, LLC
1.7	Distributor's Address:	3260 Winpark Drive, New Hope, MN., 55427 USA
1.8	Emergency Phone:	<b>ChemTrec +1 (800) 424-9300 / +1 (703) 527-3887 or Poison Control Center +1 (866) 291-7152</b>
1.9	Business Phone / Fax:	+1 (952) 388-6717

## 2. HAZARDS IDENTIFICATION

2.1	Hazard Identification:	<p>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).</p> <p><b>DANGER! EXTREMELY FLAMMABLE AEROSOL. PRESSURIZED CONTAINER MAY BURST IF HEATED. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS.</b></p> <p>Classification: Aerosol 1; Flam. Liq. 3; Asp. Tox. 1; Skin Sens.2; Eye Irrit. 2.</p>	
2.2	Label Elements:	<p><b>Hazard Statements (H):</b> H222 – Extremely flammable aerosol. H229 – Pressurized container may burst if heated. H315 – Causes skin irritation. H319 – Causes serious eye irritation.</p> <p><b>Precautionary Statements (P):</b> P210 – Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking. P211 – Do not spray on an open flame or other ignition source. P251 – Do not pierce or burn, even after use. P261 – Avoid breathing fume/gas/mist/vapors/spray. P264 – Wash thoroughly with soap and water after handling. P270 – Do not eat, drink or smoke when using this product. P271 – Only use outdoors or in a well-ventilated area. P280 – Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 – IF ON SKIN: Wash with plenty of soap and water. P321 – Specific treatment – See Section 4 of this Safety Data Sheet. P332+P313 – If skin irritation occurs: Get medical advice/attention. P362+P364 – Take off contaminated clothing and wash it before reuse. P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 – Call a POISON CENTER/doctor if you feel unwell. P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 – If eye irritation persists: get medical advice/attention. P403+P235 – Store in a well-ventilated place. Keep cool. P410+P412 – Protect from sunlight. Do not expose to temperatures exceeding 50 °F (122 °F). P405 – Store locked up. P501 – Dispose of contents/container to licenses treatment, storage and disposal facility (TSDF).</p>	
2.3	Other Warnings:	<p><b>WARNING:</b> This product can expose you to chemicals including N-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>.</p> <p>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 SDS.</p> <p><b>KEEP OUT OF REACH OF CHILDREN.</b></p>	

## 3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m <sup>3</sup> )									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		ppm			ppm				
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH		
n-HEXANE	110-54-3	MN9275000	203-777-6	65-70	50	1000	20	72	NF	500	NA	1100		
					Flam. Liq. 2; Asp. Tox. 1; Skin Irrit. 2; STOT SE3; Repr. 2; STOT RE2; Chronic Aq. Tox. 2; H225, H304, H315, H336, H361, H373, H411									
ISOPROPYL ALCOHOL	67-63-0	NT8050000	200-661-7	25-30	400	500	400	500	NF	400	500	2000	400 TWA	
					Flam. Liq. 2; Skin Irrit. 3; Eye Irrit. 2A; STOT SE 3; H225, H316, H319									
CARBON DIOXIDE	124-38-9	FF6400000	204-696-9	1-5	5000	30000	5000	9000	NF	5000	30000	40000	ASPHYX	
					Liq. Gas.; H280									



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## 4. FIRST AID MEASURES

4.1	First Aid:	<p><b>Ingestion:</b> DO NOT INDUCE VOMITING. Contact Poison Control Center +1 (866) 291-7152 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><b>Eyes:</b> If product gets in the eyes, flush eyes thoroughly with copious amounts of water for at least 15 minutes, 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.</p> <p><b>Skin:</b> Remove contaminated clothing and wash affected areas with soap and water. If discomfort persists and/or the skin reaction worsens, contact a physician immediately. Do not wear contaminated clothing until after it has been properly cleaned.</p> <p><b>Inhalation:</b> Remove victim to fresh air at once. Under extreme conditions, if breathing stops, perform artificial respiration. Seek immediate medical attention.</p>																				
4.2	Effects of Exposure:	<p><b>Ingestion:</b> If product is swallowed, may cause nausea, temporary gastrointestinal irritation. Vomiting and/or diarrhea.</p> <p><b>Eyes:</b> Moderately irritating to the eyes. Symptoms of overexposure may include redness, itching, irritation and watering.</p> <p><b>Skin:</b> May be irritating to skin. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some sensitive individuals.</p> <p><b>Inhalation:</b> None expected.</p>																				
4.3	Symptoms of Overexposure:	<p><b>Ingestion:</b> Nausea, intestinal discomfort, vomiting and/or diarrhea.</p> <p><b>Eyes:</b> Overexposure in eyes may cause redness, itching and watering.</p> <p><b>Skin:</b> Symptoms of skin overexposure may include redness, itching, and irritation of affected areas. Frostbite like symptoms. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some individuals.</p>																				
4.4	Acute Health Effects:	Moderate irritation to eyes. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) in some sensitive individuals.																				
4.5	Chronic Health Effects:	No harmful or chronic health effects are expected to occur from a single accidental ingestion.																				
4.6	Target Organs:	Eyes, Skin																				
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, and respiratory system).																				
		<table border="1"> <tr> <td colspan="3"><b>HEALTH</b></td> <td><b>3</b></td> </tr> <tr> <td colspan="3"><b>FLAMMABILITY</b></td> <td><b>3</b></td> </tr> <tr> <td colspan="3"><b>PHYSICAL HAZARDS</b></td> <td><b>0</b></td> </tr> <tr> <td colspan="3"><b>PROTECTIVE EQUIPMENT</b></td> <td><b>B</b></td> </tr> <tr> <td><b>EYES</b></td> <td><b>SKIN</b></td> <td><b>LUNGS</b></td> <td></td> </tr> </table>	<b>HEALTH</b>			<b>3</b>	<b>FLAMMABILITY</b>			<b>3</b>	<b>PHYSICAL HAZARDS</b>			<b>0</b>	<b>PROTECTIVE EQUIPMENT</b>			<b>B</b>	<b>EYES</b>	<b>SKIN</b>	<b>LUNGS</b>	
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## 5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	<b>DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR!</b> Keep away from heat, lit cigarettes, sparks & open flame. Keep container closed.	
5.2	Extinguishing Methods:	CO <sub>2</sub> , Halon (if permitted), Dry Chemical, Foam, as authorized.	
5.3	Firefighting Procedures:	<p>This product is a Class IB flammable liquid. When involved in a fire, this product will ignite readily and decompose to produce carbon oxides. Vapors of this product are heavier than air and may travel to a source of ignition and flash back to a leaking or open container.</p> <p>First responders should wear eye protection. Structural firefighters must wear SCBAs and full protective equipment. Use a water spray or fog to reduce or direct vapors. Water may not be effective in actually extinguishing a fire involving this product.</p>	



## 6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	<p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment.</p> <p>For <u>small spills</u> (e.g., &lt;1 gallon) wear appropriate personal protective equipment (e.g., goggles, gloves). Maximize ventilation (open doors and windows) and secure all sources of ignition. Remove spilled material with absorbent material and place into appropriate closed container(s) for disposal. Dispose of properly in accordance with local, state and federal regulations. Wash all affected areas and outside of container with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse.</p> <p>For <u>large spills</u> ≥ 1 gallon, deny entry to all unprotected individuals. Dike and contain spill with inert material (e.g., sand or earth). Use ONLY non-sparking tools for recovery and cleanup. Transfer liquid to containers for recovery or disposal and solid diking material to separate containers for proper disposal. Remove contaminated clothing promptly and wash affected skin areas with soap and water. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.</p>
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## 7. HANDLING & STORAGE INFORMATION

7.1	Work & Hygiene Practices:	Avoid prolonged contact with this material. Avoid breathing the vapors generated by this product. Use in a well-ventilated location (e.g., local exhaust ventilation, fans). Wash exposed skin thoroughly with plenty of soap & water after using this product. If necessary, use a moisturizer after washing. Do not eat, drink, or smoke while handling this product.
7.2	Storage & Handling:	Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans). Keep away from excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatible materials listed in Section 10. Do not store in damaged or unmarked containers or storage devices. Keep containers securely closed when not in use. Open slowly on a level, stable surface. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. As a precaution against exposure to the eyes, nose, throat and face, this product should not be stored higher than waist level. Keep away from children at all times!
7.3	Special Precautions:	Do not store where temperatures can exceed 50 °C (122 °F). Spilled material may present a slipping hazard if left unattended. Clean all spills promptly.

## 8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	Exposure Limits: ppm (mg/m <sup>3</sup> )	ACGIH		NOHSC			OSHA			OTHER
		TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	PEL	STEL	IDLH	
	CHEMICAL NAME(S)									
	n-HEXANE	50	1000	20	72	NF	500	NA	1100	
	ISOPROPYL ALCOHOL	400	500	400	500	NF	400	500	2000	400 TWA
	CARBON DIOXIDE	5000	30000	5000	9000	NF	5000	30000	40000	ASPHYX
8.2	Ventilation & Engineering Controls:	General mechanical (e.g., fans) or natural ventilation is sufficient when this product is in use. Use local or general exhaust ventilation to effectively remove and prevent buildup of vapors or mist generated from the handling of this product. Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.								
8.3	Respiratory Protection:	No special respiratory protection is required under typical circumstances of use or handling. In instances where vapors or sprays of this product are generated, and respiratory protection is needed, use only protection authorized by 29 CFR §1910.134, applicable U.S. State regulations, or the Canadian CAS Standard Z94.4-93 and applicable standards of Canadian Provinces, EC member States, or Australia.								
8.4	Eye Protection:	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. Contact lenses pose a special hazard; soft lenses may absorb and concentrate irritants. 								
8.5	Hand Protection:	If anticipated that prolonged & repeated skin contact will occur during use of this product, wear latex or rubber gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR §1910.138, the appropriate standards of Canada, of the E.C. member states. 								
8.6	Body Protection:	No special body protection is required under typical circumstances of use and handling. If necessary, refer to appropriate standards of Canada, the E.C. member states, or U.S. OSHA.								

## 9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Appearance:	Aerosol, clear liquid
9.2	Odor:	Solvent odor
9.3	Odor Threshold:	NA
9.4	pH:	10.8
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	66.1 °C (151 °F)
9.7	Flashpoint:	- 26.11 °C (- 15 °F), based on propellant
9.8	Upper/Lower Flammability Limits:	UEL 7.7% / LEL 1.2%
9.9	Vapor Pressure:	5.6 mmHg
9.10	Vapor Density:	3 (Air = 1)
9.11	Relative Density:	0.678
9.12	Solubility:	Partially soluble
9.13	Partition Coefficient (log P <sub>ow</sub> ):	NA
9.14	Autoignition Temperature:	NA
9.15	Decomposition Temperature:	NA
9.16	Viscosity:	NA
9.17	Other Information:	Percent volatile (vol) 100%. Evaporation Rate 8.1 (Ether = 1)

## 10. STABILITY & REACTIVITY

10.1	Stability:	Relatively stable under ambient conditions when stored properly.
10.2	Hazardous Decomposition Products:	If exposed to <u>extremely high temperatures</u> , products of thermal decomposition may include irritating vapors and toxic gases (e.g., oxides of carbon & nitrogen).
10.3	Hazardous Polymerization:	Will not occur.
10.4	Conditions to Avoid:	Exposure or contact to extreme temperatures, incompatible chemicals, strong light sources, sparks, flame.
10.5	Incompatible Substances:	Strong oxidizers, peroxides or strong acids. Heat, sparks, and flames.

## 11. TOXICOLOGICAL INFORMATION

11.1	Routes of Entry:	Inhalation: YES	Absorption: YES	Ingestion: YES
11.2	Toxicity Data:	This product has NOT been tested on animals to obtain toxicology data. Toxicology data, found in scientific literature, is available for some of the components of the product and is presented below. Based on animal test results for similar products and materials (available from scientific literature), the acute toxicity of this product is expected to be: <b>n-Hexane:</b> LD <sub>50</sub> (oral, rat) > 16,000 mg/kg; LD <sub>50</sub> (dermal, rabbit) > 2,000 mg/kg; LC <sub>50</sub> (inh 4h, rat) > 31.86 mg/L. <b>Isopropyl Alcohol:</b> Log K <sub>OW</sub> = 0.05-0.14. Isopropyl alcohol occurs naturally; it is generated during microbial degradation of plant and animal wastes. When released on land or water, it is apt to volatilize and biodegrade. The estimated half-life in water is 5.4 days. Isopropyl alcohol is not expected to bioconcentrate.		
11.3	Acute Toxicity:	Moderate irritation to eyes and skin near affected areas.		
11.4	Chronic Toxicity:	This material may aggravate any pre-existing skin condition (e.g., dermatitis).		
11.5	Suspected Carcinogen:	None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA. <b>WARNING:</b> This product can expose you to chemicals including n-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> .		
11.6	Reproductive Toxicity:	<b>WARNING:</b> This product can expose you to chemicals including N-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> .		
	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:	<b>n-Hexane:</b> Readily Biodegradable (83%, 28 days)
12.2	Effects on Plants & Animals:	There are no specific data available for this product.
12.3	Effects on Aquatic Life:	<b>n-Hexane:</b> LC <sub>50</sub> (96h, <i>Fathead minnow</i> ) 2.5 mg/L; EC <sub>50</sub> (48h, <i>Daphna magna</i> ) 2.1 mg/L; EbL50 (72h, <i>Green algae</i> ) 26 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 Waste Number: D001 (characteristic - ignitable)

## 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):	UN1950, AEROSOLS, 2.1 (LTD QTY, IP VOL ≤ 1.0 L); or CONSUMER COMMODITY, ORM-D (IP VOL ≤ 1.0 L) – until 12/31/20	
14.2	IATA (AIR)*:	UN1950, AEROSOLS, FLAMMABLE, 2.1 (LTD QTY, IP VOL ≤ 1.0 L); or CONSUMER COMMODITY, 9, ID8000 (IP VOL ≤ 0.5 L)	
14.3	IMDG (OCN):	UN1950, AEROSOLS, 2.1 (LTD QTY, IP VOL ≤ 1.0 L)	
14.4	TDGR (Canadian GND):	UN1950, AEROSOLS, 2.1 (LTD QTY, IP VOL ≤ 1.0 L)	
14.5	ADR/RID (EU):	UN1950, AEROSOLS, 2.1 (LTD QTY, IP VOL ≤ 1.0 L)	
14.6	SCT (MEXICO):	UN1950, AEROSOLS, 2.1 (CANT. LTDA., IP VOL ≤ 1.0 L)	
14.7	ADGR (AUS):	UN1950, AEROSOLS, 2.1 (LTD QTY, IP VOL ≤ 1.0 L)	





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## 15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements:	This product contains <u>Hexane</u> and <u>Isopropyl Alcohol</u> , substances subject to SARA Title III, Section 313 reporting requirements.
15.2	SARA TPQ:	There are no specific Threshold Planning Quantities for the components of this product.
15.3	TSCA Inventory Status:	The components of this product are listed on the TSCA Inventory.
15.4	CERCLA Reportable Quantity:	<u>Hexane</u> : 2,270 kg (5,000 lbs)
15.5	Other Federal Requirements:	NA
15.6	Other Canadian Regulations:	This product has been classified according to the hazard criteria of the CPR and the SDS 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 B5, D2B (Flammable Aerosol, Other Toxic Effects) 
15.7	State Regulatory Information:	<u>Hexane</u> is found on the following state criteria list: Florida Toxic Substances List (FL), Massachusetts Hazardous Substances List (MA), Minnesota Hazardous Substances List (MN), Pennsylvania Right to Know (PA) and Washington Permissible Exposures List (WA). <u>Isopropyl Alcohol</u> is found on the following state criteria lists: FL, MA, MN, NJ, PA, and WA. <u>Carbon Dioxide</u> is found on the following state criteria list: FL, MA, MN, 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). <b>WARNING:</b> This product can expose you to chemicals including N-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> .
15.8	Other Requirements:	 <b>WARNING:</b> This product can expose you to chemicals including n-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>

## 16. OTHER INFORMATION

16.1	Other Information:	<b>DANGER! EXTREMELY FLAMMABLE AEROSOL. PRESSURIZED CONTAINER; MAY BURST IF HEATED. HIGHLY FLAMMABLE LIQUID AND VAPOR. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS. TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS.</b> Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist/vapor/spray. Wash 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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Specific treatments see section 4 of this SDS. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove person to fresh and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. In case of fire: use Alcohol Resistant-Foam, CO <sub>2</sub> , or Water Jet to extinguish. Collect spillage. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up. <b>KEEP OUT OF REACH OF CHILDREN.</b>  <b>WARNING:</b> This product can expose you to chemicals including n-Hexane, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> .
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 & Birchwood Casey, LLC knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness is not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.
16.4	Prepared for:	<b>Birchwood Casey, LLC</b> 3260 Winpark Drive New Hope, MN 55427 USA Tel: +1 (952) 388-6717 Email: <a href="mailto:customerservice@birchwoodcasey.com">customerservice@birchwoodcasey.com</a> <a href="http://www.birchwoodCasey.com">http://www.birchwoodCasey.com</a> 
16.5	Prepared by:	<b>ShipMate, Inc.</b> P.O. Box 787 Sisters, Oregon 97759-0787 USA Tel: +1 (310) 370-3600 Fax: +1 (310) 370-5700 <a href="http://www.shipmate.com">http://www.shipmate.com</a> 





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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

### HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

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

<b>HEALTH</b>
<b>FLAMMABILITY</b>
<b>PHYSICAL HAZARDS</b>
<b>PERSONAL PROTECTION</b>

### PERSONAL PROTECTION RATINGS:

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:

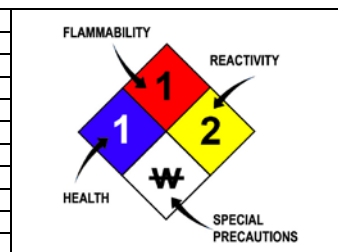
Carc	Carcinogenic
Irrit	Irritant
NA	Not Available
NR	No Results
ND	Not Determined
NE	Not Established
NF	Not Found
SCBA	Self-Contained Breathing Apparatus
Sens	Sensitization
STOT RE	Specific Target Organ Toxicity – Repeat Exposure
STOT SE	Specific Target Organ Toxicity – Single Exposure

### NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

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

### HAZARD RATINGS:

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 <sub>50</sub>	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
LC <sub>50</sub>	Lethal concentration (gases) which kills 50% of the exposed animal
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
TD <sub>10</sub> , LD <sub>10</sub> , & LD <sub>01</sub> or TC, TC <sub>01</sub> , LC <sub>10</sub> , & LC <sub>01</sub>	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 <sub>m</sub>	Median threshold limit
log K <sub>OW</sub> or log K <sub>OC</sub>	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