SAFETY DATA SHEET

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS, GHS & 1272/2008/EC Standards | SDS Revision: 1.0 | SDS Revision Date: 10/25/2018

1. PRODUCT & COMPANY IDENTIFICATION

1.1	Product Name:	**BORE SCRUBBER BORE CLEANER AEROSOL**
1.2	Chemical Name:	Aerosol
1.3	Synonyms:	33640
1.4	Trade Names:	Bore Scrubber Bore Cleaner Aerosol
1.5	Product Use:	Aerosol Bore 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:	**ChemTrec +1 (800) 424-9300 / +1 (703) 527-3887** or **Poison Control Center +1 (866) 291-7152**
1.9	Business Phone / Fax:	+1 (952) 388-6717

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).

DANGER! FLAMMABLE AEROSOL. PRESSURIZED CONTAINER MAY BURST IF HEATED. MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS.

Classification: Aerosol 2; Flam. Liq. 3; Asp. Tox. 1; Skin Sens.2; Eye Irrit. 2.

2.2 Label Elements:

Hazard Statements (H): H223 – Flammable aerosol. H229 – Pressurized container may burst if heated. H304 – May be fatal if swallowed and enters airways. H315 – Causes skin irritation. H319 – Causes serious eye irritation.

Precautionary Statements (P): 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. P301+P312 – IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. P331 – Do NOT induce vomiting. 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: Remover 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).

2.3 Other Warnings: **KEEP OUT OF REACH OF CHILDREN.**

3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m³) ACGIH ppm TLV	ACGIH ppm STEL	NOHSC ppm ES-TWA	NOHSC ppm ES-STEL	NOHSC ppm ES-PEAK	OSHA ppm PEL	OSHA ppm STEL	OSHA ppm IDLH	OTHER
DIPROPYLENE GLYCOL MONOMETHYL ETHER	34590-94-8	JM1575000	252-104-2	< 48	100	150	50	308	NF	100	NA	600	
KEROSENE (PETROLEUM)	8008-20-6	OA5500000	230-366-4	< 20	200	NA	NF	NF	NF	100	NA	NA	SKIN
	Asp. Tox.1; H304												
PROPANE	74-98-6	TX2275000	200-827-9	< 11	1000	NA	1000	NF	NF	1000	NA	2100	
	Flam. Gas 1; Press. Gas; H220												
OLEIC ACID	112-80-1	RG2275000	204-007-1	< 10	NA	NA	NF	NF	NF	NA	NA	NA	
BUTANE	106-97-8	EJ4200000	203-448-7	< 10	1000	900	800	1900	NF	NA	NA	1900	
	Press. Gas; Flam. Gas 1; H220												
PROPYLENE GLYCOL	57-55-6	TY2000000	200-338-0	< 6	NA	NA	(150)	474	NF	NA	NA	NA	(10) WEEL
	Skin Irrit. 3; Eye Irrit. 2; H316, H320												
OXYGENATED HYDROCARBONS	NA	NA	NA	< 4	NA	NA	NF	NF	NF	NA	NA	NA	
NAPHTHENIC PETROLEUM OIL*	64742-53-6	NA	265-156-6	< 4	(5)	NA	(5)	NF	NF	(5)	10	NA	OIL MIST
	Asp. Tox.1; H304												
MONOETHANOLAMINE	141-43-5	KJ5775000	205-483-3	< 4	3	NA	3	NF	NF	3	NA	30	3 NIOSH
	Acute Toxicity-Oral 4; Acute Toxicity-Dermal 4; Skin Corrosion 1B; Acute Toxicity-Inhalation 4; H302, H312, H314, H332												

* contains less than 3% Dimethyl Sulfoxide (DMSO)

4. FIRST AID MEASURES

4.1	First Aid:	Ingestion:	DO NOT INDUCE VOMITING. Contact the nearest Poison Control Center or local emergency telephone number for assistance and instructions. Seek immediate medical attention. Do not induce vomiting. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
		Eyes:	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. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		Skin:	If irritation occurs & product is on the skin, rinse thoroughly with lukewarm water, followed by a thorough washing of the affected area with plenty of soap and water. Remove all contaminated clothing, including footwear and wash thoroughly before reuse. If irritation, redness or swelling persists, consult a physician immediately.
		Inhalation:	Remove victim to fresh air at once. Under extreme conditions, if breathing stops, perform artificial respiration. Seek immediate medical attention.
4.2	Effects of Exposure:	Ingestion:	If product is swallowed, may cause nausea, vomiting and/or diarrhea and central nervous system depression.
		Eyes:	Moderately irritating to the eyes. The vapor is discomforting to the eye. Symptoms of overexposure may include redness, itching, irritation and watering.
		Skin:	May be irritating to skin, especially after prolonged contact. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) upon prolonged or repeated exposure.
		Inhalation:	Vapors of this product may be moderately irritating to the nose, throat and other tissues of the respiratory system. Symptoms of overexposure can include coughing, wheezing, nasal congestion, and difficulty breathing. Inhalation of concentrated vapors can cause central nervous system depression (e.g., drowsiness, dizziness, headaches, nausea). Odor may give some warning of exposure, but odor fatigue may occur. The dried film of this product may become dust nuisance when removed by sanding or grinding.
4.3	Symptoms of Overexposure:	Symptoms of skin overexposure may include redness, itching, and irritation of affected areas. Prolonged or repeated contact may result in defatting and drying of the skin which may result in dermatitis. Overexposure in eyes may cause redness, itching and watering. Symptoms of inhalation may be evidenced by headache, dizziness, nausea and symptoms of intoxication. In extreme cases, unconsciousness and death.	
4.4	Acute Health Effects:	Moderate irritation to eyes and skin near affected areas. Additionally, high concentrations of vapors can cause drowsiness, dizziness, headaches and nausea.	
4.5	Chronic Health Effects:	The material may accentuate any pre-existing dermatitis condition. Inhalation of high concentration of this material can cause central nervous system depression and may be associated with cardiac arythmias.	
4.6	Target Organs:	Eyes, Skin, Lungs	
4.7	Medical Conditions Aggravated by Exposure:	Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin) or impaired kidney function may be more susceptible to the effects of this substance.	

HEALTH	**3**
FLAMMABILITY	**3**
PHYSICAL HAZARDS	**0**
PROTECTIVE EQUIPMENT	**B**

EYES	**SKIN**	**LUNGS**

5. FIREFIGHTING MEASURES

5.1	Fire & Explosion Hazards:	**DANGER! FLAMMABLE LIQUID AND VAPOR!** Keep away from heat, lit cigarettes, sparks & open flame. Keep container closed.
5.2	Extinguishing Methods:	CO_2, Halon (if permitted), Dry Chemical, Foam, as authorized.
5.3	Firefighting Procedures:	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. 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.

6. ACCIDENTAL RELEASE MEASURES

6.1	Spills:	Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment. For small spills (e.g., <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. For large spills ≥ 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.

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^3)

	ACGIH		NOHSC			OSHA			OTHER
CHEMICAL NAME(S)	**TLV**	**STEL**	**ES-TWA**	**ES-STEL**	**ES-PEAK**	**PEL**	**STEL**	**IDLH**	
DIPROPYLENE GLYCOL MONOMETHYL ETHER	100	150	100	NF	NF	100	150	NA	
KEROSENE (PETROLEUM)	200	NA	NF	NF	NF	100	NA	NA	SKIN
PROPANE	1000	NA	1000	NF	NF	1000	NA	2100	
BUTANE	1000	900	800	1900	NF	NA	NA	1900	
PROPYLENE GLYCOL	NA	NA	(150)	474	NF	NA	NA	NA	(10) WEEL
NAPHTHENIC PETROLEUM OIL	(5)	NA	(5)	NF	NF	(5)	10	NA	OIL MIST
MONOETHANOLAMINE	3	NA	3	NF	NF	3	NA	30	3 NIOSH

8.2	Ventilation & Engineering Controls:	Use local or general exhaust ventilation to effectively remove and prevent buildup of vapors or mist generated from the handling of this product. Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station).
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 yellow-like liquid
9.2	Odor:	Slight kerosene odor
9.3	Odor Threshold:	NA
9.4	pH:	NA
9.5	Melting Point/Freezing Point:	NA
9.6	Initial Boiling Point/Boiling Range:	- 42.2 to 133.3 ºC (- 44 to - 208 ºF)
9.7	Flashpoint:	- 104.4 ºC (- 156 ºF), based on propellant
9.8	Upper/Lower Flammability Limits:	UEL 15% / LEL 1.9%
9.9	Vapor Pressure:	50 psig
9.10	Vapor Density:	> 1 (Air = 1)
9.11	Relative Density:	< 1
9.12	Solubility:	Negligible
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:	Percent volatile (vol) 90%

10. STABILITY & REACTIVITY

10.1	Stability:	Relatively stable under ambient conditions when stored properly.
10.2	Hazardous Decomposition Products:	If exposed to extremely high temperatures, 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: $LD_{50,}$ (oral, rat): 5,130 mg/kg (Dipropylene Glycol Monomethyl Ether); 1,720 mg/kg (mono-Ethanolamine) Mineral Oils – LD_{50} (oral, rat) > 5,000 mg/kg; 2-Ethylhexanol: LC_{50} (inh, rat, 1h): 2.7 mg/L, LD_{50} (oral, rat): > 2,000 mg/kg Hydrotreated Light Naphthenic Petroleum Distillates (Highly Refined): $LD_{50,}$ (oral, rat) > 5 gm/kg					
11.3	Acute Toxicity:	Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include lung inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current work place exposure levels produced no significant toxicological effects. Moderate irritation to eyes and skin near affected areas. Additionally, high concentrations of vapors can cause drowsiness, dizziness, headaches and nausea.					
11.4	Chronic Toxicity:	Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne.					
11.5	Suspected Carcinogen:	Kerosene (Petroleum): AGIH A3 (confirmed animal carcinogen with unknown relevance to humans) This product contains a hydrotreated mineral oil with less than 3% DMSO extract as measured by IP 346 and is not considered a carcinogen. This product does not contain any chemicals known to the State of California to cause cancer or other reproductive harm. For more information go to www.P65Warnings.ca.gov.					
11.6	Reproductive Toxicity:	This product is not reported to cause reproductive toxicity in humans.					
	Mutagenicity:	This product is not reported to produce mutagenic effects in humans.					
	Embryotoxicity:	This product is not reported to produce embryotoxic effects in humans.					
	Teratogenicity:	This product is not reported to cause teratogenic effects in humans.					
	Reproductive Toxicity:	This product is not reported to cause reproductive effects in humans.					
11.7	Irritancy of Product:	See Section 4.2					
11.8	Biological Exposure Indices:	NE					
11.9	Physician Recommendations:	Treat symptomatically.					

12. ECOLOGICAL INFORMATION

12.1	Environmental Stability:	Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.
12.2	Effects on Plants & Animals:	There are no specific data available for this product. An environmental fate analysis has not been conducted on this specific product. However, plants and animals may experience harmful or fatal effects when coated with petroleum-based products. □
12.3	Effects on Aquatic Life:	Petroleum-based (mineral) lube oils will normally float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway can result in a loss of marine life or create an anaerobic environment. This material contains phosphorus which is a controlled element for disposal in effluent waters in most sections of North America. Phosphorus is known to enhance the formation of algae. Severe algae growth can reduce oxygen content in the water possibly below levels necessary to support marine life.

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, AEROSOLES, 2.1 (CANT. LTDA., IP VOL ≤ 1.0 L)	
14.7	ADGR (AUS):	UN1950, AEROSOLS, 2.1 (LTD QTY, IP VOL ≤ 1.0 L)	

15. REGULATORY INFORMATION

15.1	SARA Reporting Requirements:	This product does not contain a substance 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:	NA
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 MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List. WHMIS Class B3 (combustible liquids). WHMIS Class D2B (material causing other toxic effects). 
15.7	State Regulatory Information:	Kerosene (Petroleum) is found n the following state criteria lists: MA, NJ and PA. Propane is found on the following state criteria list: MA, MN, PA, and WA. Propylene Glycol is found on the following state criteria lists: MN, and PA. Dipropylene Glycol Monomethyl Ether is found on the following state criteria lists: 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).
15.8	Other Requirements:	This product does not contain any chemicals known to the State of California to cause cancer or other reproductive harm. For more information, go to www.P65warnings.ca.gov.

16. OTHER INFORMATION

16.1	Other Information:	**DANGER! FLAMMABLE AEROSOL. PRESSURIZED CONTAINER MAY BURST IF HEATED. MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS. CAUSES SKIN IRRITATION. CAUSES SERIOUS EYE IRRITATION. MAY CAUSE DROWSINESS OR DIZZINESS.** Wash hands and exposed skin areas thoroughly with soap and warm water after handling. Do not eat drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER. IF ON SKIN: Wash with plenty of soap and water. For specific first aid treatment (see section 4 of this Safety Data Sheet). Rinse mouth. Store Locked up. Use only in well-ventilated area. Extinguish pilot light, cigarettes and other possible sources of ignition prior to use and until vapors are gone. **KEEP LOCKED UP AND OUT OF REACH OF CHILDREN**.
16.2	Terms & Definitions:	See last page of this Safety Data Sheet.
16.3	Disclaimer:	This Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of 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:	**Birchwood Casey, LLC** 3260 Winpark Drive New Hope, MN 55427 USA Tel: +1 (952) 388-6717 Fax: +1 (952) 388-6702 Email: customerservice@birchwoodcasey.com http://www.birchwoodCasey.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

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.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

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	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	
X	**Consult your supervisor or SOPs for special handling directions.**


Safety Glasses


Splash Goggles


Face Shield & Protective Eyewear


Gloves


Boots


Protective Apron


Protective Clothing & Full Suit


Dust Respirator


Full Face Respirator


Dust & Vapor Half-Mask Respirator


Full Face Respirator


Airline Hood/Mask or SCBA

OTHER STANDARD ABBREVIATIONS:

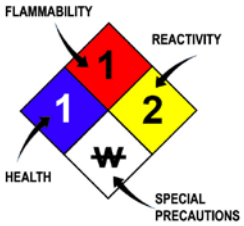
Carc	Carcinogenic
Irrit	Irritant
NA	Not Available
NR	No Results
ND	Not Determined
NE	Not Established
NF	Not Found
SCBA	Self-Contained Breathing Apparatus
Sens	Sensitization
STOT RE	Specific Target Organ Toxicity – Repeat Exposure
STOT SE	Specific Target Organ Toxicity – Single Exposure

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

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

HAZARD RATINGS:

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



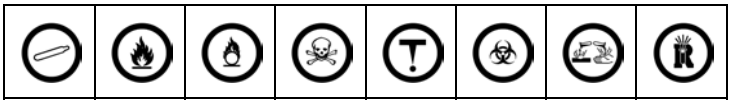
TOXICOLOGICAL INFORMATION:

LD_{50}	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
LC_{50}	Lethal concentration (gases) which kills 50% of the exposed animal
ppm	Concentration expressed in parts of material per million parts
TD_{lo}	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD_{lo}, LD_{lo}, & LD_o or TC, TC_o, LC_{lo}, & LC_o	Lowest dose (or concentration) to cause lethal or toxic effects
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL_m	Median threshold limit
log K_{OW} or log K_{OC}	Coefficient of Oil/Water Distribution

REGULATORY INFORMATION:

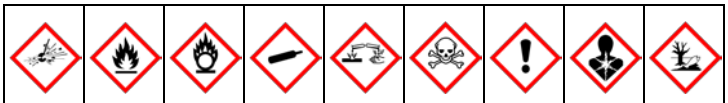
WHMIS	Canadian Workplace Hazardous Material Information System
DOT	U.S. Department of Transportation
TC	Transport Canada
EPA	U.S. Environmental Protection Agency
DSL	Canadian Domestic Substance List
NDSL	Canadian Non-Domestic Substance List
PSL	Canadian Priority Substances List
TSCA	U.S. Toxic Substance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

WORKPLACE HAZARDOUS MATERIALS IDENTIFICATION (WHMIS) SYSTEM:



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

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



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