



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name FF-850
Revision Date 12/21/2011
Version # 2
Product Use Foamer.
Manufacturer / Supplier FRAC TECH SERVICES LLC
2500 HWY 62 West
Chickasha, OK 73018
US
General information: 1-405-222-2300
Emergency 24 Hour Emergency: INFOTRAC: 1-800-535-5053

2. Hazards Identification

Physical State Liquid.
Appearance Clear amber liquid.
Emergency Overview WARNING!
Harmful if swallowed. Can cause kidney damage. High vapor concentrations may cause central nervous system effects. At elevated temperatures, vapor may cause irritation of eyes and respiratory tract.
OSHA regulatory status This product is hazardous according to OSHA 29 CFR 1910.1200.
Routes of exposure
Eyes Direct contact with eyes may cause temporary irritation
Skin Prolonged or repeated contact may cause itching, redness, and rash in some individuals.
Inhalation High vapor concentrations may cause central nervous system effects.
Ingestion Harmful if swallowed. Can cause kidney damage.
Potential environmental effects Not expected to be harmful to aquatic organisms.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Glycol ethers	9004-77-7	<20
Ethylene glycol	107-21-1	<5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures
Eye Contact Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention promptly if symptoms occur after washing.
Skin Contact Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.
Inhalation If symptomatic, move to fresh air. Get medical attention if symptoms persist.
Ingestion Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.
Notes to physician Not available.

5. Fire Fighting Measures

Flammable Properties No unusual fire or explosion hazards noted.

Extinguishing media**Suitable extinguishing media** Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).**Unsuitable extinguishing media** Not available.**Specific Hazards arising from the Chemical** Not available.**Firefighting equipment / instructions**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific Methods

Not available.

Hazardous combustion products

Carbon oxides.

6. Accidental Release Measures**Personal precautions**

Wear appropriate personal protective equipment (See Section 8).

Methods for cleaning up

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste for proper disposal.

Large Spills: Flush area with water. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

7. Handling and Storage**Handling**

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste for proper disposal.

Large Spills: Flush area with water. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

Storage

Keep container closed. Store away from incompatible materials (See Section 10).

8. Exposure Controls / Personal Protection**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Glycol ethers	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	Not available.	100 (Aerosol)	Not available.	Not available.

US. OSHA Table Z-1 Limits for Air Contaminates (29 CFR 1910.1000)

Components	PEL	
	ppm	mg/m3
Glycol ethers	Not available.	Not available.
Ethylene glycol	Not available.	Not available.

Canada. Alberta OELs (Occupational Health Safety Code, Schedule 1, Table 2)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Glycol ethers	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	Not available.	100 (Ceiling)	Not available.	Not available.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Glycol ethers	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	50 (Ceiling Vapor)	10 (Particulate) 100 (Ceiling Aerosol)	Not available.	20 (Particulate)

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Glycol ethers	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	Not available.	100 (Ceiling)	Not available.	Not available.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Glycol ethers	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	Not available.	127 (Ceiling, Vapor and Mist)	50 (Ceiling, Vapor and Mist)	Not available.

Mexico. Occupational Exposure Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Glycol ethers	Not available.	Not available.	Not available.	Not available.
Ethylene glycol	Not available.	100 (Ceiling, Aerosol)	Not available.	Not available.

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Wear safety glasses with side shields (or goggles).
Skin protection	Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister.
General hygiene consideration	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and Chemical Properties

Appearance:	Clear amber liquid.
Color	Amber.
Odor	Mild.
Odor threshold	Not available.
Physical State	Liquid.
Form	Liquid.
pH	7 - 8
Melting point	Not available.
Freezing point	15 °F (-9.4 °C)
Boiling point	Not available.
Flash point	>210 °F (>98.9 °C) Closed Cup
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific Gravity	1.024 - 1.055 (25°C)
Solubility (water)	Complete.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Bulk Density	8.73 lb/gal
VOC	Not available.
Viscosity	Not available.

Percent volatile Not available.

10. Chemical Stability Reactivity Information

Chemical Stability Material is stable under normal conditions.
Conditions to avoid None known.
Incompatible material Strong oxidizing agents.
Hazardous decomposition products No hazardous decomposition products are known.
Possibility of hazardous reaction Hazardous polymerization does not occur.

11. Toxicology Information

Toxicological Data

Components	Test Results
Glycol ethers	Not available.
Ethylene glycol	Not available.

Sensitization This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Carcinogenicity

Glycol ethers	Not available.
Ethylene glycol	A4 Not classifiable as a human carcinogen.

Epidemiology Not available.

Mutagenicity Not available.

Reproductive effects Not available.

Teratogenicity Not available.

Further Information Acute effects: Harmful if swallowed. High vapor concentrations may cause central nervous system effects. At elevated temperatures, vapor may cause irritation of eyes and respiratory tract. Chronic effects: Can cause kidney damage. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Glycol ethers	Not available.
Ethylene glycol	Not available.

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence and degradability	Not available.
Bioaccumulation / Accumulation	Not available.
Mobility in environmental media	Not available.
Partition coefficient (n-octanol/water)	Not available.

13. Disposal Considerations

Waste codes	Not available.
Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations. When this product as supplied is to be discarded as waste, it does not meet the definition of a RCRA waste under 40 CFR 261.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

UN number	
Proper shipping name	Not regulated as dangerous goods.
Hazard class	
Packing Group	
Labels required	
DOT Reportable Quantity:	Not available.
Additional information	
Special provisions	
Packaging exceptions	
Packaging non bulk	
Packaging bulk	
ERG number	

IATA

UN number	
Proper shipping name	Not regulated as dangerous goods.
Hazard class	
Packing group	
Additional information	
ERG code	

IMDG

UN number	
Proper shipping name	Not regulated as dangerous goods.
Hazard class	
Packing group	
EmS No	
IMDG Additional information:	

15. Regulatory Information

US federal regulation This product is hazardous according to OSHA 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA (Superfund) Reportable Quantity: Ethylene glycol: 5000lbs

Superfund amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories	Immediate Hazard:	Yes
	Delayed Hazard:	Yes
	Fire Hazard:	No
	Pressure Hazard:	No
	Reactivity Hazard:	No

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D): Not regulated.

US CAA Section 112 Hazardous Air Pollutants (HAPs) List: ETHYLENE GLYCOL (CAS 107-21-1)

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration: Ethylene glycol (CAS 107-21-1) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance: Ethylene glycol (CAS 107-21-1) Listed.

Section 302 extremely hazardous substance (40CRF 355, Appendix A): No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15): Not controlled

Section 311/312 (40 CFR 370): No

Inventory Status

Country	Inventory Name	On Inventory *
Australia	AICS	Yes
Canada	DSL	Yes
Canada	NDSL	No
China	IECSC	Yes
Europe	EINECS	No
Europe	ELINCS	No
Japan	ENCS	Yes
Korea	ECL	Yes
New Zealand	NZI	Yes
United States / Puerto Rico	TSCA	Yes
Phillipines	PICCS	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

WHMIS Information WHMIS status Controlled

WHMIS classification D2A - Other Toxic Effects-VERY TOXIC

State Regulation

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance
Ethylene glycol (CAS 107-21-1) Listed.

US - Massachusetts RTK - Substance: Listed substance
Ethylene glycol (CAS 107-21-1) Listed.

US - New Jersey Community RTK (EHS Survey): Reportable threshold
Ethylene glycol (CAS 107-21-1) 500 LBS

US - New Jersey RTK - Substances: Listed substance

Ethylene glycol (CAS 107-21-1) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance
Ethylene glycol (CAS 107-21-1) Listed.

16. Other Information

Further Information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 1*

Flammability: 1

Physical Hazard: 0

A HMIS® rating including an * indicates a chronic hazard.

NFPA ratings

Health: 1

Flammability: 1

Instability: 0

Disclaimer

Seller warrants that the goods described herein shall conform to the seller's published specifications for such good. The goods described herein and the information relating to them is intended for use solely by buyers that have the necessary industrial skill, competence and knowledge to use these goods for their intended purposes. Buyers should undertake sufficient examination, verification and testing prior to use of the goods to determine the suitability and utility of the goods for Buyer's particular purposes. Buyer acknowledges that the conditions of use and uses of the good(s) are beyond the control of Seller. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSES WHATSOEVER WITH RESPECT TO THE GOODS BEING SOLD HEREUNDER. BUYER ACKNOWLEDGES THAT THE GOODS ARE BEING SOLD "AS IS." BUYER FURTHER ACKNOWLEDGES THAT THERE HAVE BEEN NO REPRESENTATIONS CONCERNING THE GOODS BEING SOLD HEREUNDER OTHER THAN WHAT ARE EXPRESSLY SET FORTH AND CONTAINED HEREIN.

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