



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name CS-500 SI
Revision Date 12/21/2011
Version # 3
Product Use Scale inhibitor.
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 Yellow to amber liquid.
Emergency Overview WARNING!
Harmful if swallowed. Can cause kidney damage.
OSHA regulatory status This product is hazardous according to OSHA 29 CFR 1910.1200.
Routes of exposure Ingestion.
Eyes Direct contact with eyes may cause temporary irritation.
Skin Prolonged or repeated contact may cause itching, redness, and rash in some individuals.
Inhalation At elevated temperatures, vapor may cause irritation of respiratory tract.
Ingestion Ingestion of high levels may produce kidney damage.
Potential environmental effects Not expected to be harmful to aquatic organisms.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Ethylene glycol	107-21-1	5 - 10

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 Seek medical advice.
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. Sodium oxides. Chlorine.

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**

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

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
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
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
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
Ethylene glycol	50 (Vapor)	10 (Particulate) 100 (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
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
Ethylene glycol	50 (Vapor)	127 (Vapor)	Not available.	Not available.

Mexico. Occupational Exposure Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ethylene glycol	Not available.	100 (Ceiling)	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:	Yellow to amber liquid.
Color	Yellow to amber.
Odor	Mild.
Odor threshold	Not available.
Physical State	Liquid.
Form	Liquid.
pH	5 - 6
Melting point	Not available.
Freezing point	12 °F (-11.1 °C)
Boiling point	209.3 °F (98.5 °C)
Flash point	> 208.9 °F (> 98.3 °C) Closed
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	1.145 (25°C)
Solubility (water)	Complete.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Bulk Density	9.55 lb/gal
VOC	Not available.
Viscosity	9.9 cP (25 °C)
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

Ethylene glycol

Test ResultsAcute Dermal LD50 Rabbit: 9530 mg/kg
Acute Oral LD50 Rat: 6140 mg/kg**Sensitization**

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

Carcinogenicity

Ethylene glycol

A4 Not classifiable as a human carcinogen.

Epidemiology

Not available.

Mutagenicity

Not available.

Reproductive effects

Not available.

Teratogenicity

Not available.

Further Information

Not available.

12. Ecological Information**Ecotoxicological data****Components**

Ethylene glycol

Test ResultsLC50 Fathead minnow (*Pimephales promelas*): 8050 mg/l 96 hours**Ecotoxicity**

Not expected to be harmful to aquatic organisms.

Persistence and degradability

No data available.

Bioaccumulation / Accumulation

No data available.

Mobility in environmental media

Not available.

Partition coefficient (n-octanol/water)

No data 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 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 (40 CRF 355, Appendix A): No

Section 311/312 (40 CFR 370): No

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

Inventory Status

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

*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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