



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name FRW-200W
Revision Date 12/21/2011
Version # 3
Product Use Friction Reducer
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 White viscous liquid.
Emergency Overview Avoid contact with skin, eyes and clothing. Spills produce extremely slippery surfaces.
OSHA regulatory status Not available.
Routes of exposure
Eyes May cause eye irritation with susceptible persons.
Skin May cause skin irritation with susceptible persons.
Inhalation Not a likely route of exposure. Repeated or prolonged exposure may irritate the respiratory tract.
Ingestion Not a likely route of exposure. If swallowed a jelly mass may form which in digestion may cause blockage.
Potential environmental effects Not available.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Petroleum distillate hydrotreated light	64742-47-8	< 30
Ethylene Glycol	107-21-1	< 4

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 Immediately flush with plenty of water for at least 15 minutes. If symptoms develop, seek medical advice.
Skin Contact Remove contaminated clothing. Wash off affected area immediately with soap and plenty of water. If symptoms develop, seek medical advice.
Inhalation Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.
Ingestion Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. Get medical attention.
Notes to physician Not available.

5. Fire Fighting Measures

Flammable Properties Non-flammable

Extinguishing media

Suitable extinguishing media Foam, Dry powder, Carbon dioxide, Other extinguishing agent suitable for Class B fires

Unsuitable extinguishing media Do not use water unless flooding amounts are available.

Specific Hazards arising from the Chemical Spills produce extremely slippery surfaces. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions.

Firefighting equipment / instructions In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

Specific Methods Not available.

Hazardous combustion products Not available.

6. Accidental Release Measures

Personal precautions Restrict access to area as appropriate until clean-up operations are complete. Notify appropriate government, occupational health and safety and environmental authorities. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Spill may be slippery.

Methods for cleaning up SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area.

LARGE SPILLS: Water in contact with the product will create a voluminous, slippery gel. Soak up as thoroughly as possible with inert absorbent material or sawdust. Do NOT hose down area until all possible traces of polymer are removed. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

7. Handling and Storage

Handling Avoid contact with skin and eyes. When preparing the working solution ensure there is adequate ventilation. When using do not smoke. Stir before use. No separation should be visible.

Storage Keep in a dry, cool place (0 - 30°C). When preparing the working solution ensure there is adequate ventilation. Freezing will affect the physical condition and may damage the material.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Petroleum distillate hydrotreated light	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	100 (Ceiling)	Not available.	Not available.

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

Components	PEL	
	ppm	mg/m3
Petroleum distillate hydrotreated light	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
Petroleum distillate hydrotreated light	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	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
Petroleum distillate hydrotreated light	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

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

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Petroleum distillate hydrotreated light	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	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
Petroleum distillate hydrotreated light	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

Mexico. Occupational Exposure Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Petroleum distillate hydrotreated light	Not available.	Not available.	Not available.	Not available.
Ethylene Glycol	Not available.	Not available.	Not available.	Not available.

Engineering controls	General ventilation is recommended. Local exhaust ventilation may be necessary when dusts or mists are generated.
Personal protective equipment	
Eye / face protection	Wear chemical splash goggles.
Skin protection	Wear standard protective clothing.
Respiratory protection	Where concentrations in air may exceed the limits given in this section or when significant mists vapors, aerosols, or dusts are generated, an approved air purifying respirator equipped with suitable filter cartridges is recommended. Consult the respirator / cartridge manufacturer data to verify the suitability of specific devices. In event of emergency or planned entry into unknown concentrations a positive pressure, full-face piece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.
General hygiene consideration	Not available.

9. Physical and Chemical Properties

Appearance:	White viscous liquid
Color	White
Odor	Hydrocarbon
Odor threshold	Not available.
Physical State	Liquid
Form	Liquid
pH	6 – 8 (1% solution)
Melting point	Not available.
Freezing point	< -4°F (<-20°C)
Boiling point	Not available.
Flash point	Does not flash.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	0.002 @ 68°F (20°C)
Vapor density	Not available.
Specific Gravity	1.00 – 1.08
Solubility (water)	Emulsifiable.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Does not ignite.
Decomposition temperature	Not available.
Bulk Density	8.6 – 9.0 lb/gal
VOC	Not available.
Viscosity	400 – 1200 cps @ 77°F (25°C)

Percent volatile Not available.

10. Chemical Stability Reactivity Information

Chemical Stability Stable under normal conditions.

Conditions to avoid Freezing temperatures. Extremes of temperature.

Incompatible material Addition of water results in gelling. Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

Hazardous decomposition products Under fire conditions: Oxides of carbon, Oxides of nitrogen

Possibility of hazardous reaction Hazardous polymerization will not occur.

11. Toxicology Information

Toxicological Data

Components	Test Results
Petroleum distillate hydrotreated light	LD50/oral/rat: >5000 mg/kg
Ethylene Glycol	Not available

Sensitization The product is not expected to be sensitizing.

Carcinogenicity

Petroleum distillate hydrotreated light	None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).
Ethylene Glycol	None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

Epidemiology Not available.

Mutagenicity Not available.

Reproductive effects Not available.

Teratogenicity Not available.

Further Information Not available.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Petroleum distillate hydrotreated light	Fathead Minnow 96 hrs 34.3 mg/l Inland Silverside 96 hrs 52.5 mg/l

Ecotoxicity	Similar product tested in clean water: Daphnia magna 48 hrs 0.12 - 0.69 mg/l 1% Aqueous Solution of a Similar Product: Sheepshead Minnow 96 hrs > 1,000 mg/l Rainbow Trout 96 hrs > 1,000 mg/l Daphnia magna 48 hrs 280 mg/l Mysid Shrimp (Mysidopsis Bahia) 96 hrs 400 mg/l
Persistence and degradability	Not readily biodegradable
Bioaccumulation / Accumulation	This preparation or material is not expected to bioaccumulate.
Mobility in environmental media	The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages; Air: <5%, Water: 10-30%< Soil/Sediment: 70-90%.
Partition coefficient (n-octanol/water)	Not available.

13. Disposal Considerations

Waste codes	Not available.
Disposal instructions	If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D. As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.
Contaminated packaging	Not available.

14. Transport Information

DOT

UN number	
Proper shipping name	Not regulated.
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.

Hazard class
Packing group
Additional information
ERG code

IMDG

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

15. Regulatory Information

US federal regulation

CERCLA (Superfund) Reportable Quantity: Ethylene Glycol: 5000 lb

Superfund amendments and Reauthorization Act of 1986 (SARA)

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

Section 302 extremely hazardous substance: None

Section 311 hazardous chemical: This product may contain trace levels of the following substance(s) listed under regulation:
Benzene

Inventory Status

Country	Inventory Name	On Inventory *
Australia	AICS	Yes
Canada	DSL	Yes
Canada	NDSL	No
China	IECSC	Yes
Europe	EINECS	Yes
Europe	ELINCS	Yes
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 Not available.
State Regulation Not available.

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

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