



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name FRW-200
Revision Date 12/21/2011
Version # 2
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, mobile liquid.
Emergency Overview CAUTION: May cause eye and skin irritation. Spills of this product are very slippery.
OSHA regulatory status Not available.
Routes of exposure Overexposure to petroleum distillates has been found to cause liver and kidney damage in laboratory animals.
Eyes Direct contact with this material may cause mild eye irritation.
Skin Repeated or prolonged dermal contact with this material may cause skin irritation.
Inhalation Not available.
Ingestion Not available.
Potential environmental effects Not available.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Petroleum distillate hydrotrea	64742-47-8	17.6 – 26

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 In case of eye contact, immediately irrigate with plenty of water for 15 minutes. Obtain medical attention if irritation persists or if otherwise necessary.
Skin Contact Do not reuse contaminated clothing without laundering. Wash immediately with plenty of water. Remove contaminated clothing and shoes without delay. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.
Inhalation Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.
Ingestion Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. If swallowed, call a physician immediately.
Notes to physician Not available.

5. Fire Fighting Measures

Flammable Properties Not available.

Extinguishing media

Suitable extinguishing media Use water spray, carbon dioxide, or dry chemical.

Unsuitable extinguishing media Not available.

Specific Hazards arising from the Chemical Not available.

Firefighting equipment / instructions

Wear full firefighting protective clothing. See MSDS Section 8, Firefighters, and others exposed, wear self-contained breathing apparatus.

Specific Methods

Keep containers cool by spraying with water if exposed to fire.

Hazardous combustion products

Not available.

6. Accidental Release Measures

Personal precautions

Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8, wear impermeable boots.

Methods for cleaning up

Spilled material should be absorbed onto an inert material and scooped up. Flush spill area with water. Product may cause a slip hazard. If slipperiness remains apply more dry-sweeping compound.

7. Handling and Storage

Handling

Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. It is recommended that the entire contents of the container be agitated prior to use. Provide good ventilation of working area (local exhaust ventilation if necessary).

Storage

Avoid storing at elevated temperatures. Keep from freezing. Store at 5° – 27°C / 41° – 80.6° F.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Petroleum distillate hydrotrea	Not available.	Not available.	Not available.	Not available.

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

Components	PEL	
	ppm	mg/m3
Petroleum distillate hydrotrea	500	1200

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

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Petroleum distillate hydrotrea	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 hydrotrea	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 hydrotrea	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 hydrotrea	Not available.	Not available.	Not available.	Not available.

Mexico. Occupational Exposure Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Petroleum distillate hydrotrea	Not available.	Not available.	Not available.	Not available.

Engineering controls

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

Personal protective equipment

Eye / face protection

Eyewash equipment and safety shower should be provided in areas of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

Skin protection

Wear impermeable gloves and suitable protective clothing. Avoid skin contact.

Respiratory protection

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

General hygiene consideration

Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. Food beverages, and tobacco products should not be carried, stored, or consumed where this material is in use.

9. Physical and Chemical Properties

Appearance:	White viscous liquid.
Color	Milky white
Odor	Slight petroleum oil
Odor threshold	Not Available.
Physical State	Liquid
Form	Liquid
pH	6 – 8 (upon dilution in water)
Melting point	< 20° F (< -6.66° C)
Freezing point	25°F (-3.88°C)
Boiling point	> 212° F (>100°C)
Flash point	> 210 F (>93.9°C)
Evaporation rate	<1 (Butyl acetate = 1)
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	1.06 – 1.08 @ 77°F / 25°C
Solubility (water)	Limited by viscosity
Partition coefficient (n-octanol/water)	Not Available.
Auto-ignition temperature	Not Available.
Decomposition temperature	Not Available.
Bulk Density	8.92 lb/gal
VOC	Not available.
Viscosity	Not available.
Percent volatile	Not available.

10. Chemical Stability Reactivity Information

Chemical Stability	This product is stable.
Conditions to avoid	Avoid elevated temperatures. Do not freeze.
Incompatible material	Oxidizing agents may cause exothermic reactions.
Hazardous decomposition products	Oxides of carbon, hydrocarbons, acrid vapors and fumes.
Possibility of hazardous reaction	Hazardous polymerization will not occur.

11. Toxicology Information

Toxicological Data

Components**Test Results**

Petroleum distillate hydrotrea

Petroleum distillates, hydrotreated light (CAS # 64742-47-8) has acute oral (rat) and dermal (rabbit) LD50 values of >5 g/kg and >3.16 g/kg, respectively. Prolonged or repeated skin contact tends to remove skin oils, possible leading to irritation and dermatitis. Direct contact may cause eye irritation. Overexposure to high vapor concentrations > ≈70ppm, are irritating to the eyes and respiratory tract and may cause headaches, dizziness, drowsiness, and other central nervous system effects, including death. Aspiration of minute amounts during ingestion or vomiting may cause mild to severe pulmonary injury and possible death. In a 90-day oral gavage (rats) study at 100, 500, or 1000 mg/kg, no treatment-related mortalities were observed. There were no significant changes in body weights or food consumption in any dose groups. Increased liver weights were observed in male and female rats at 500 and 1000 mg/kg. Increased kidney weights were observed only in male rats at 500 and 1000 mg/kg/ Testes weights were significantly elevated in male rats at 1000 mg/kg. Kidney effects, indicative of light hydrocarbon nephropathy, occurred in male rats kidneys at all dose levels. Histological findings of hepatocellular hypertrophy were seen in the livers of male rats at 1000 mg/kg and female rats at 500 and 1000 mg/kg. All treatment-related effects were reversible within the 4-week recovery period. Observed kidney effects (including light hydrocarbon nephropathy and increased kidney weight) are a unique response by male rats to chronic hydrocarbon exposure, which the U.S. EPA has declared „not relevant to humans“. High-dose liver effects (including hepatocellular hypertrophy, or enlarged liver cells) are a direct consequence of a sustained high „hydrocarbon diet“. The No Observed Adverse Effect Level (NOAEL) for this study was 1000 mg/kg.

Sensitization

Not available.

Carcinogenicity

Petroleum distillate hydrotrea

California Proposition 65 Warning (applicable in California only) – This product contains (a) chemical(s) known to the state of California to cause cancer.

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 hydrotrea

Fish LC50/Danio rerio/96 hr > 100 mg/L (OECD 203)
 Algae IC50/Scenedesmus subspicatus /72 hr > 100 mg/L (OECD 201)
 Daphnia EC50/Daphnia magna/48 hr > 100 mg/L (OECD 202)

Ecotoxicity

Not available.

Persistence and degradability

Not readily biodegradable.

Bioaccumulation / Accumulation Not available.
Mobility in environmental media Not available.
Partition coefficient (n-octanol/water) Not available.

13. Disposal Considerations

Waste codes In accordance with federal, state, and local regulations.
Disposal instructions Rinse empty containers with water and use the rinse water to prepare the working solution. Can be land filled or incinerated, when in compliance with local regulations.
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: None

Superfund amendments and Reauthorization Act of 1986 (SARA)

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

Section 311 hazardous chemical: Acute

Inventory Status

Country	Inventory Name	On Inventory *
Australia	AICS	No
Canada	DSL	Yes
Canada	NDSL	No
China	IECSC	Yes
Europe	EINECS	No
Europe	ELINCS	No
Japan	ENCS	Yes
Korea	ECL	No
New Zealand	NZI	No
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

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains a chemical(s) known to the State of California to cause cancer: residual acrylamide.

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.

