



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name FRW-900
Revision Date 8/1/2014
Version # 02
Product Use Friction Reducer
Manufacturer / Supplier FTS International 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 Opaque, Off-white Milky
Emergency Overview Irritating to eyes. Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Use a mild soap if available. Water in contact with the product will cause slippery floor conditions. Wear suitable protective clothing. Wear safety glasses with side-shields. Not flammable or combustible. Phase separation of the product may occur after prolonged storage. The top phase will be combustible hydrocarbon solvent.
OSHA regulatory status Not available.
Routes of exposure Eye, Skin
Eyes Causes eye irritation.
Skin Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering.
Inhalation Health injuries are not known or expected under normal use. Repeated or prolonged exposure may irritate the respiratory tract.
Ingestion Health injuries are not known or expected under normal use.
Potential environmental effects Keep out of waterways. This product may pose a risk to the aquatic ecosystem if released.

3. Composition / Information on Ingredients

| Components | CAS # | Percent |
|-------------------------------|-------------|---------|
| Hydrotreated Light Distillate | 64742-47-8 | 10 - 30 |
| Alkyl Alcohol | Proprietary | 5 - 10 |
| Oxyalkylated alcohol A | Proprietary | 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 Wipe or blot away excess material with clean cloth or paper towel. Wash affected areas thoroughly with water. Get medical attention.
Skin Contact Wipe or blot away excess material with clean cloth or paper towel. Wash affected areas thoroughly with water. Get medical attention if symptoms occur.
Inhalation If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Ingestion Do not induce vomiting without medical advice. Get medical attention.

Notes to physician

If swallowed a jelly mass may form which in digestion may cause blockage.

5. Fire Fighting Measures**Flammable Properties**

Not flammable or combustible.

Extinguishing media**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

None known.

Specific Hazards arising from the Chemical

Phase separation of the product may occur after prolonged storage. The top phase will be combustible hydrocarbon solvent.

Firefighting equipment / instructions

Use personal protective equipment.

Specific Methods

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Hazardous combustion products

Carbon oxides, nitrogen oxides

6. Accidental Release Measures**Personal precautions**

Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8. Spill may be slippery.

Methods for cleaning up

Clean-up methods - small spillage Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean-up methods - large spillage Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

7. Handling and Storage**Handling**

Avoid contact with skin and eyes. Wash hands thoroughly after handling. Use only with adequate ventilation. Stir well prior to use.

Storage

Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers. Protect product from freezing. Store separately from oxidizers. Keep in properly labelled containers.

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

| Components | TWA | | STEL | |
|-------------------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Hydrotreated Light Distillate | Not available. | 200 | Not available. | Not available. |
| Alkyl Alcohol | Not available. | Not available. | Not available. | Not available. |
| Oxyalkylated alcohol A | 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 |
| Hydrotreated Light Distillate | 500 | 2000 |
| Alkyl Alcohol | Not available. | Not available. |
| Oxyalkylated alcohol A | Not available. | Not available. |

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

| Components | TWA | | STEL | |
|-------------------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Hydrotreated Light Distillate | Not available. | Not available. | Not available. | Not available. |
| Alkyl Alcohol | Not available. | Not available. | Not available. | Not available. |
| Oxyalkylated alcohol A | 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 |
| Hydrotreated Light Distillate | Not available. | Not available. | Not available. | Not available. |
| Alkyl Alcohol | Not available. | Not available. | Not available. | Not available. |
| Oxyalkylated alcohol A | 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 |
| Hydrotreated Light Distillate | Not available. | Not available. | Not available. | Not available. |
| Alkyl Alcohol | Not available. | Not available. | Not available. | Not available. |
| Oxyalkylated alcohol A | 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 |
| Hydrotreated Light Distillate | Not available. | Not available. | Not available. | Not available. |
| Alkyl Alcohol | Not available. | Not available. | Not available. | Not available. |
| Oxyalkylated alcohol A | Not available. | Not available. | Not available. | Not available. |

Mexico. Occupational Exposure Limit Values

| Components | TWA | | STEL | |
|-------------------------------|----------------|----------------|----------------|----------------|
| | ppm | mg/m3 | ppm | mg/m3 |
| Hydrotreated Light Distillate | Not available. | Not available. | Not available. | Not available. |
| Alkyl Alcohol | Not available. | Not available. | Not available. | Not available. |
| Oxyalkylated alcohol A | Not available. | Not available. | Not available. | Not available. |

Engineering controls Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye / face protection Safety glasses with side-shields.

Skin protection When handling this product, the use of chemical gloves is recommended. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Wear suitable protective clothing.

Respiratory protection No personal respiratory protective equipment normally required.

General hygiene consideration Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

9. Physical and Chemical Properties

Appearance: Emulsion

Color Milky Off-white

| | |
|-------------------------------------------------------|---------------------------|
| Odor | Aromatic |
| Odor threshold | Not available. |
| Physical State | Liquid |
| Form | Emulsion |
| pH | 7.0 |
| Melting point | Not available. |
| Freezing point | -4 °F (-20 °C) |
| Boiling point | 199.4 °F (93.3 °C) |
| Flash point | >199.4 °F (>93.3 °C) PMCC |
| Evaporation rate | Not available. |
| Flammability limits in air, upper, % by volume | Not available. |
| Flammability limits in air, lower, % by volume | Not available. |
| Vapor pressure | 0.667 hPa (25 °C) |
| Vapor density | Not available. |
| Specific Gravity | 1.091 (25 °C) |
| Solubility (water) | Dispersible |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Bulk Density | 9.01 lb/gal |
| VOC | Not available. |
| Viscosity | Not available. |
| Percent volatile | Not available. |

10. Chemical Stability Reactivity Information

| | |
|------------------------------------------|--------------------------------------------------------------|
| Chemical Stability | Stable under normal conditions. |
| Conditions to avoid | Extremes of temperature. |
| Incompatible material | Not available. |
| Hazardous decomposition products | Under fire conditions: Oxides of carbon, Oxides of nitrogen. |
| Possibility of hazardous reaction | No dangerous reaction known under conditions of normal use. |

11. Toxicology Information

Toxicological Data

| Components | Test Results |
|-------------------------------|---------------------|
| Hydrotreated Light Distillate | Not available. |
| Alkyl Alcohol | Not available. |
| Oxyalkylated alcohol A | Not available. |
| Sensitization | Not available. |

Carcinogenicity

Hydrotreated Light Distillate Not present at levels greater than or equal to 0.1% is identified as probable, possible or

| | |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Alkyl Alcohol | confirmed human carcinogen by IARC, OSHA, or NTP. Not present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, OSHA, or NTP. |
| Oxyalkylated alcohol A | Not present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, OSHA, or NTP. |
| 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 |
|------------------------------------------------|----------------------------------------------------------------|
| Hydrotreated Light Distillate | Not available. |
| Alkyl Alcohol | Not available. |
| Oxyalkylated alcohol A | Not available. |
| Ecotoxicity | Not available. |
| Persistence and degradability | Not available. |
| Bioaccumulation / Accumulation | This preparation or material is not expected to bioaccumulate. |
| Mobility in environmental media | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |

13. Disposal Considerations

| | |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste codes | Not available. |
| Disposal instructions | The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility. |
| Contaminated packaging | Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. |

14. Transport Information

DOT

| | |
|--------------------------------|---------------|
| UN number | |
| Proper shipping name | Not regulated |
| Hazard class | |
| Packing Group | |
| Labels required | |
| DOT reportable quantity | |
| 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: Cupric Sulphate (CAS# 7758-98-7) 10 - Calculated RQ exceeds reasonably attainable upper limit.

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 |

SARA 304 Extremely Hazardous Substances Reportable Quantity: Acrylonitrile (CAS# 107-13-1) 100 - Calculated RQ exceeds reasonably attainable upper limit.

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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 Not available.

State Regulation

California Prop 65

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

16. Other Information**Further Information**

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

HMIS® ratings

Health: 2

Flammability: 1

Physical Hazard: 0

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

NFPA ratings

Health: 2

Flammability: 1

Instability: 0

Disclaimer

The information provided herein by FTS International Services, LLC ("FTSI") relates only to the specific material designated and may not be valid for such material if used in combination with any other material(s) in any process of any kind or is otherwise altered. Such information is, to the best of FTSI's knowledge and belief, accurate and reliable as of the date compiled.

Notwithstanding the foregoing, FTSI makes no representation, warranty or guarantee as to the accuracy, reliability or completeness of the information set forth herein. FTSI does not accept liability for any loss or damage that may occur from the use of this information. It is solely the responsibility of the user to determine safe conditions for use of this material and to assume liability for any loss, damage or expense whatsoever arising out of the material's improper use. ALL WARRANTIES, EXPRESS, IMPLIED (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) OR OTHERWISE, ARE HEREBY EXPRESSLY DISCLAIMED BY FTSI.

Issue Date

8/1/2014