

MATERIAL SAFETY DATA SHEET

Product Trade Name: **FR-58**

Revision Date: 03-Jan-2012

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: FR-58
Synonyms: None
Chemical Family: Cationic Polymer
Application: Friction Reducer

Manufacturer/Supplier: Halliburton Energy Services, Inc.
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Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated heavy naphthenic distillate	64742-52-5	30 - 60%	Not applicable	Not applicable
Distillates, petroleum, solvent-refined heavy paraffinic	64741-88-4	1 - 5%	Not applicable	Not applicable
Alcohols, C11-14-iso-, C-13-rich, ethoxylated propoxylated	78330-23-1	1 - 5%	Not applicable	Not applicable
Acrylamide copolymer		30 - 60%	Not applicable	Not applicable
Stoddard solvent	8052-41-3	1 - 5%	100 ppm	500 ppm
Adipic acid	124-04-9	1 - 5%	5 mg/m ³	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye, skin, and respiratory irritation. May cause lung damage if swallowed. May cause headache, dizziness, and other central nervous system effects.

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	> 200
Flash Point/Range (C):	> 93
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Carbon Dioxide, Dry Chemicals, Foam.

Special Exposure Hazards Spills produce extremely slippery surfaces. Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 1, Reactivity 0
HMIS Ratings: Health 2*, Flammability 1, Physical Hazard 0 , PPE: X

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Spills of this product are very slippery.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Contain spill with sand or other inert materials. Scoop up and remove. Isolate spill and stop leak where safe.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist. Material is slippery underfoot. Launder contaminated clothing before reuse. Do NOT consume food, drink, or tobacco in contaminated areas.

Storage Information Store in a cool, dry location. Store in a well ventilated area. Keep from excessive heat. Keep from freezing. Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 12 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor cartridge with particulate prefilter.

Hand Protection Impervious rubber gloves. Polyvinylchloride gloves.

Skin Protection	Rubber apron.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Off white
Odor:	Mild amine
pH:	7.4
Specific Gravity @ 20 C (Water=1):	1.06
Density @ 20 C (lbs./gallon):	8.83
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	> 212
Boiling Point/Range (C):	> 100
Freezing Point/Range (F):	< 32
Freezing Point/Range (C):	< 0
Vapor Pressure @ 20 C (mmHg):	0.5
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Disperses
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Do not expose to heat or store at temperatures above 120 F (49 C). Freezing conditions.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	Excessive inhalation causes headache, dizziness, nausea and incoordination. May cause respiratory irritation.
Skin Contact	Can dry skin. May cause skin defatting with prolonged exposure.
Eye Contact	May cause eye irritation.

Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	Prolonged or repeated skin exposure may cause dermatitis. Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals. Limited studies on oils that are very active carcinogens have shown washing the animals' skin with soap and water between applications greatly decreases the incidence of tumors. In light of these studies, good personal hygiene is essential with the use of this product.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: > 2000 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Contains less than 3% DMSO extract as measured by IP 346.
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Transportation Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	The California Proposition 65 regulations apply to this product.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory or are exempt.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

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*****END OF MSDS*****