

## SAFETY DATA SHEET

**Product Trade Name:** FR-2

**Revision Date:** 06-Jan-2017

**Revision Number:** 7

### 1. Identification

#### 1.1. Product Identifier

**Product Trade Name:** FR-2  
**Synonyms:** None  
**Chemical Family:** Salt Polymer Blend  
**Internal ID Code:** 000042

#### 1.2 Recommended use and restrictions on use

**Application:** Friction Reducer  
**Uses advised against:** No information available

#### 1.3 Manufacturer's Name and Contact Details

##### Manufacturer/Supplier

Halliburton Energy Services, Inc.  
P.O. Box 1431  
Duncan, Oklahoma 73536-0431  
Telephone: 1-281-871-6107

Halliburton Energy Services, Inc.  
645 - 7th Ave SW Suite 1800  
Calgary, AB  
T2P 4G8  
Canada

**Prepared By:** Chemical Stewardship  
Telephone: 1-281-871-6107  
e-mail: fdunexchem@halliburton.com

#### 1.4. Emergency telephone number

**Emergency Telephone Number:** 1-866-519-4752 or 1-760-476-3962  
Global Incident Response Access Code: 334305  
Contract Number: 14012

### 2. Hazards Identification

#### 2.1 Classification in accordance with paragraph (d) of §1910.1200

Serious Eye Damage/Irritation	Category 2B - H320
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#### 2.2. Label Elements

##### Hazard Pictograms

**Signal Word:** Warning

**Hazard Statements:** H320 - Causes mild eye irritation

##### Precautionary Statements

<b>Prevention Response</b>	P264 - Wash face, hands and any exposed skin thoroughly after handling P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention
<b>Storage</b>	None
<b>Disposal</b>	None

**2.3 Hazards not otherwise classified**

None known

**3. Composition/information on Ingredients**

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Sodium chloride	7647-14-5	60 - 100%	Eye Irrit. 2B (H320)

The exact percentage (concentration) of the composition has been withheld as proprietary.

**4. First Aid Measures****4.1. Description of first aid measures**

<b>Inhalation</b>	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
<b>Eyes</b>	Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.
<b>Skin</b>	Wash with soap and water. Get medical attention if irritation persists.
<b>Ingestion</b>	Under normal conditions, first aid procedures are not required.

**4.2 Most important symptoms/effects, acute and delayed**

Causes mild eye irritation.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

**5. Fire-fighting measures****5.1. Extinguishing media****Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**5.2 Specific hazards arising from the substance or mixture****Special exposure hazards in a fire**

Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**5.3 Special protective equipment and precautions for fire-fighters****Special protective equipment for firefighters**

Not applicable

**6. Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

See Section 8 for additional information

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

**7. Handling and storage****7.1. Precautions for safe handling****Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Ground and bond containers when transferring from one container to another. Slippery when wet. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities****Storage Information**

Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Keep from heat, sparks, and open flames. Product has a shelf life of 24 months.

**8. Exposure Controls/Personal Protection****8.1 Occupational Exposure Limits**

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Sodium chloride	7647-14-5	Not applicable	Not applicable

**8.2 Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**8.3 Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**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, AS/NZS 1715:2009, 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:

Dust/mist respirator. (N95, P2/P3)

**Hand Protection**

Normal work gloves.

**Skin Protection**

Normal work coveralls.

**Eye Protection**

Wear safety glasses or goggles to protect against exposure.

**Other Precautions**

None known.

**9. Physical and Chemical Properties**

**9.1. Information on basic physical and chemical properties**

<b>Physical State:</b> Powder	<b>Color</b>	White
<b>Odor:</b> Slight	<b>Odor Threshold:</b>	No information available

<u>Property</u>	<u>Values</u>
<u>Remarks/ - Method</u>	
<b>pH:</b>	9 (.5%)
<b>Freezing Point / Range</b>	No data available
<b>Melting Point / Range</b>	No data available
<b>Boiling Point / Range</b>	No data available
<b>Flash Point</b>	No data available
<b>Flammability (solid, gas)</b>	No data available
Upper flammability limit	No data available
Lower flammability limit	No data available
<b>Evaporation rate</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	2
<b>Water Solubility</b>	Soluble in water
<b>Solubility in other solvents</b>	No data available
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive Properties</b>	No information available
<b>Oxidizing Properties</b>	No information available

**9.2. Other information**

<b>VOC Content (%)</b>	No data available
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**10. Stability and Reactivity****10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong oxidizers.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide. Ammonia.

**11. Toxicological Information****11.1 Information on likely routes of exposure**

<b>Principle Route of Exposure</b>	Eye or skin contact, inhalation.
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**11.2 Symptoms related to the physical, chemical and toxicological characteristics****Acute Toxicity****Inhalation**

May cause mild respiratory irritation.

**Eye Contact**

Causes mild eye irritation.

**Skin Contact**

Not irritating to skin in rabbits.

**Ingestion**

Large doses may cause nausea, vomiting and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**11.3 Toxicity data****Toxicology data for the components**

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium chloride	7647-14-5	3000 mg/kg-bw (rat)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Sodium chloride	7647-14-5	Not a dermal irritant

Substances	CAS Number	Serious eye damage/irritation
Sodium chloride	7647-14-5	May cause mild eye irritation.

Substances	CAS Number	Skin Sensitization
Sodium chloride	7647-14-5	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Sodium chloride	7647-14-5	Not confirmed to cause skin or respiratory sensitization.

Substances	CAS Number	Mutagenic Effects
Sodium chloride	7647-14-5	No information available

Substances	CAS Number	Carcinogenic Effects
Sodium chloride	7647-14-5	No information available

Substances	CAS Number	Reproductive toxicity
Sodium chloride	7647-14-5	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
Sodium chloride	7647-14-5	No information available

Substances	CAS Number	STOT - repeated exposure
Sodium chloride	7647-14-5	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
Sodium chloride	7647-14-5	Not applicable

**12. Ecological Information****12.1. Toxicity****Substance Ecotoxicity Data**

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Sodium chloride	7647-14-5	No information available	LC50 (96h) 9675 mg/L	No information available	No information available

**12.2. Persistence and degradability**

Substances	CAS Number	Persistence and Degradability
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Sodium chloride	7647-14-5	The methods for determining biodegradability are not applicable to inorganic substances.
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### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Sodium chloride	7647-14-5	No information available

### 12.4. Mobility in soil

Substances	CAS Number	Mobility
Sodium chloride	7647-14-5	No information available

### 12.5 Other adverse effects

No information available

## 13. Disposal Considerations

### 13.1. Waste treatment methods

**Disposal methods** Bury in a licensed landfill according to federal, state, and local regulations.  
**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. Transport Information

### US DOT

**UN Number** Not restricted  
**UN proper shipping name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

### Canadian TDG

**UN Number** Not restricted  
**UN proper shipping name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

### IMDG/IMO

**UN Number** Not restricted  
**UN proper shipping name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

### IATA/ICAO

**UN Number** Not restricted  
**UN proper shipping name:** Not restricted  
**Transport Hazard Class(es):** Not applicable  
**Packing Group:** Not applicable  
**Environmental Hazards:** Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable

**Special Precautions for User** None

## 15. Regulatory Information

### US Regulations

**US TSCA Inventory** All components listed on inventory or are exempt.

#### TSCA Significant New Use Rules - S5A2

Substances	CAS Number	TSCA Significant New Use Rules - S5A2
Sodium chloride	7647-14-5	Not applicable

#### EPA SARA Title III Extremely Hazardous Substances

Substances	CAS Number	EPA SARA Title III Extremely Hazardous Substances
Sodium chloride	7647-14-5	Not applicable

#### EPA SARA (311,312) Hazard Class

Acute Health Hazard

#### EPA SARA (313) Chemicals

Substances	CAS Number	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Sodium chloride	7647-14-5	Not applicable	Not applicable

#### EPA CERCLA/Superfund Reportable Spill Quantity

Substances	CAS Number	CERCLA RQ
Sodium chloride	7647-14-5	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

Substances	CAS Number	California Proposition 65
Sodium chloride	7647-14-5	Not applicable

#### U.S. State Right-to-Know Regulations

Substances	CAS Number	MA Right-to-Know Law	NJ Right-to-Know Law	PA Right-to-Know Law
Sodium chloride	7647-14-5	Not applicable	Not applicable	Not applicable

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

### Canadian Regulations

**Canadian Domestic Substances List (DSL)** All components listed on inventory or are exempt.

## 16. Other information

#### Preparation Information

**Prepared By** Chemical Stewardship  
 Telephone: 1-281-871-6107  
 e-mail: fdunexchem@halliburton.com

**Revision Date:** 06-Jan-2017

**Reason for Revision** SDS sections updated:  
2

**Additional information**

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

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

**Key or legend to abbreviations and acronyms used in the safety data sheet**

bw – body weight

CAS – Chemical Abstracts Service

d - day

EC50 – Effective Concentration 50%

ErC50 – Effective Concentration growth rate 50%

h - hour

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL50 – Lethal Loading 50%

mg/kg – milligram/kilogram

mg/L – milligram/liter

mg/m<sup>3</sup> - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

NIOSH – National Institute for Occupational Safety and Health

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PEL – Permissible Exposure Limit

ppm – parts per million

STEL – Short Term Exposure Limit

TWA – Time-Weighted Average

UN – United Nations

w/w - weight/weight

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

**Disclaimer Statement**

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**End of Safety Data Sheet**