

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** Fe-8

**Revision Date:** 20-Dec-2012

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** Fe-8  
**Synonyms:** None  
**Chemical Family:** Blend  
**Application:** Iron Reducing Agent  
**Manufacturer/Supplier:** Halliburton Energy Services  
P.O. Box 1431  
Duncan, Oklahoma 73536-0431  
Emergency Telephone: (281) 575-5000  
**Prepared By:** Chemical Compliance  
Telephone: 1-580-251-4335  
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances        | CAS Number | PERCENT  | ACGIH TLV-TWA         | OSHA PEL-TWA        |
|-------------------|------------|----------|-----------------------|---------------------|
| Ethylene glycol   | 107-21-1   | 30 - 60% | 100 mg/m <sup>3</sup> | 50 ppm CEIL         |
| Tin dichloride    | 7772-99-8  | 30 - 60% | 2 mg/m <sup>3</sup>   | 2 mg/m <sup>3</sup> |
| Hydrochloric acid | 7647-01-0  | 10 - 30% | 2 ppm                 | 5 ppm               |

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye and skin burns. May cause respiratory irritation. May be harmful if swallowed.

## 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** In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and laundry 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** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

|                                         |                |
|-----------------------------------------|----------------|
| Flash Point/Range (F):                  | Not Determined |
| Flash Point/Range (C):                  | Min: > 180     |
| Flash Point Method:                     | Not Determined |
| 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** All standard firefighting media.

**Special Exposure Hazards** May form explosive mixtures with strong alkalis. Decomposition in fire may produce toxic gases.

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

**NFPA Ratings:** Health 3, Flammability 1, Reactivity 0

**HMIS Ratings:** Health 3, Flammability 1, Reactivity 0

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

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

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

**Storage Information** Store away from alkalis. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 24 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** Organic vapor/acid gas respirator.

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Full protective chemical resistant clothing.

**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:          | Clear light yellow |
| Odor:           | Acidic             |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                            |                |
|--------------------------------------------|----------------|
| pH:                                        | 1              |
| Specific Gravity @ 20 C (Water=1):         | 1.72           |
| Density @ 20 C (lbs./gallon):              | 14.33          |
| Bulk Density @ 20 C (lbs/ft3):             | Not Determined |
| Boiling Point/Range (F):                   | 288            |
| Boiling Point/Range (C):                   | 142            |
| Freezing Point/Range (F):                  | < -22          |
| Freezing Point/Range (C):                  | Max: < -22     |
| Vapor Pressure @ 20 C (mmHg):              | Not Determined |
| Vapor Density (Air=1):                     | Not Determined |
| Percent Volatiles:                         | Not Determined |
| Evaporation Rate (Butyl Acetate=1):        | Not Determined |
| Solubility in Water (g/100ml):             | Soluble        |
| Solubility in Solvents (g/100ml):          | Not Determined |
| VOCs (lbs./gallon):                        | Not Determined |
| Viscosity, Dynamic @ 20 C (centipoise):    | Not Determined |
| Viscosity, Kinematic @ 20 C (centistokes): | 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                  | None known.                                                           |
| Incompatibility (Materials to Avoid) | Strong alkalis.                                                       |
| Hazardous Decomposition Products     | Flammable hydrogen gas. Chlorine. Carbon monoxide and carbon dioxide. |
| Additional Guidelines                | Not Applicable                                                        |

## 11. TOXICOLOGICAL INFORMATION

|                                 |                                                                                                                                                                                                                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Principle Route of Exposure     | Eye or skin contact, inhalation.                                                                                                                                                                                          |
| Inhalation                      | Causes severe respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.         |
| Skin Contact                    | Causes severe burns.                                                                                                                                                                                                      |
| Eye Contact                     | Causes severe eye burns.                                                                                                                                                                                                  |
| Ingestion                       | Causes burns of the mouth, throat and stomach. May cause heart, kidney and brain disorders.                                                                                                                               |
| Aggravated Medical Conditions   | Skin disorders.                                                                                                                                                                                                           |
| Chronic Effects/Carcinogenicity | Prolonged or repeated exposure may cause kidney, lung and blood effects. Prolonged or repeated exposure may cause central nervous system and brain effects. Prolonged, excessive exposure may cause erosion of the teeth. |
| Other Information               | None known.                                                                                                                                                                                                               |
| Toxicity Tests                  |                                                                                                                                                                                                                           |

|                                                   |                |
|---------------------------------------------------|----------------|
| <b>Oral Toxicity:</b>                             | Not determined |
| <b>Dermal Toxicity:</b>                           | Not determined |
| <b>Inhalation Toxicity:</b>                       | Not determined |
| <b>Primary Irritation Effect:</b>                 | Not determined |
| <b>Carcinogenicity</b>                            | Not determined |
| <b>Genotoxicity:</b>                              | Not determined |
| <b>Reproductive /<br/>Developmental Toxicity:</b> | Not determined |

## 12. ECOLOGICAL INFORMATION

|                                  |                |
|----------------------------------|----------------|
| <b>Mobility (Water/Soil/Air)</b> | Not determined |
| <b>Persistence/Degradability</b> | Not determined |
| <b>Bio-accumulation</b>          | Not determined |

### Ecotoxicological Information

|                                    |                |
|------------------------------------|----------------|
| <b>Acute Fish Toxicity:</b>        | Not determined |
| <b>Acute Crustaceans Toxicity:</b> | Not determined |
| <b>Acute Algae Toxicity:</b>       | Not determined |

|                                  |                |
|----------------------------------|----------------|
| <b>Chemical Fate Information</b> | Not determined |
| <b>Other Information</b>         | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

|                               |                                                                                   |
|-------------------------------|-----------------------------------------------------------------------------------|
| <b>Disposal Method</b>        | Disposal should be made in accordance with federal, state, and local regulations. |
| <b>Contaminated Packaging</b> | Follow all applicable national or local regulations.                              |

## 14. TRANSPORT INFORMATION

### Land Transportation

#### DOT

UN1789,Hydrochloric Acid Solution, 8, II  
NAERG 157

#### Canadian TDG

Hydrochloric Acid Solution, 8, UN1789, II

#### ADR

UN1789,Hydrochloric Acid Solution, 8, II

### Air Transportation

## ICAO/IATA

UN1789,Hydrochloric Acid Solution, 8, II

## Sea Transportation

### IMDG

UN1789,Hydrochloric Acid Solution, 8, II  
EmS F-A, S-B

## Other Transportation Information

Labels: Corrosive

## 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  
Chronic Health Hazard

**EPA SARA (313) Chemicals** This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372:  
Ethylene Glycol//107-21-1

**EPA CERCLA/Superfund Reportable Spill Quantity** EPA Reportable Spill Quantity is 1163 Gallons based on Ethylene glycol (CAS: 107-21-1).

**EPA RCRA Hazardous Waste Classification** If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:  
  
Corrosivity D002

**California Proposition 65** All components listed do not apply to the California Proposition 65 Regulation.

**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** E Corrosive Material  
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\*\*\***