

## MATERIAL SAFETY DATA SHEET

Product Trade Name: **FE-5A**

Revision Date: 07-Jan-2015

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: FE-5A  
Synonyms: None  
Chemical Family: Organic acid  
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  
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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Thioglycolic acid	68-11-1	60 - 100%	TWA: 1 ppm	Not applicable

### 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory burns. May be harmful if swallowed. May cause allergic skin reaction. May be absorbed through the skin.

### 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 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** 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** None known.

## 5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	230
Flash Point/Range (C):	110
Flash Point Method:	PMCC
Autoignition Temperature (F):	550
Autoignition Temperature (C):	288
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

**Fire Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** 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 3, Flammability 1, Reactivity 1  
**HMIS Ratings:** Health 3, Flammability 1, Reactivity 1

## 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 oxidizers. Store away from alkalis. Store away from acids. Store in a dry location. Store in a cool well ventilated area. 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** 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 colorless
Odor:	Irritating
pH:	1.04
Specific Gravity @ 20 C (Water=1):	1.28
Density @ 20 C (lbs./gallon):	10.66
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	221
Boiling Point/Range (C):	105
Freezing Point/Range (F):	2.3
Freezing Point/Range (C):	-16.5
Vapor Pressure @ 20 C (mmHg):	10
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	100
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:	0.059
Molecular Weight (g/mole):	92.11

## 10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers. Strong acids. Strong alkalis. Contact with metals.
Hazardous Decomposition Products	Hydrogen sulfide. Oxides of sulfur. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

## 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

### Symptoms related to exposure

#### Acute Toxicity

##### Inhalation

Causes severe respiratory burns.

##### Eye Contact

May cause eye burns.

##### Skin Contact

Causes severe burns. May be absorbed through the skin and produce effects similar to those caused by inhalation and/or ingestion. May cause an allergic skin reaction.

##### Ingestion

Causes burns of the mouth, throat and stomach. May cause weakness, dyspnea, or coma.

Chronic Effects/Carcinogenicity Prolonged or repeated skin exposure may cause dermatitis.

### Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Thioglycolic acid	68-11-1	73 mg/kg ( Rat )	No data available	0.21 mg/L ( Rat ) 4 h

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information

#### Ecotoxicity Product

Acute Fish Toxicity: Not determined  
Acute Crustaceans Toxicity: Not determined  
Acute Algae Toxicity: Not determined

#### Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Thioglycolic acid	68-11-1	No information available	No information available	No information available	No information available

#### 12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Thioglycolic acid	68-11-1	No information available

#### 12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Thioglycolic acid	68-11-1	No information available

#### 12.4. Mobility in soil

No information available

#### 12.5. Results of PBT and vPvB assessment

No information available.

#### 12.6. Other adverse effects

## 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

#### US DOT

UN Number: UN1940  
UN Proper Shipping Name: Thioglycolic Acid  
Transport Hazard Class(es): 8  
Packing Group: II  
NAERG: NAERG 153

#### US DOT Bulk

DOT (Bulk) Not applicable

#### Canadian TDG uI0

UN Number: UN1940  
UN Proper Shipping Name: Thioglycolic Acid  
Transport Hazard Class(es): 8  
Packing Group: II

### IMDG/IMO

**UN Number:** UN1940  
**UN Proper Shipping Name:** Thioglycolic Acid  
**Transport Hazard Class(es):** 8  
**Packing Group:** II  
**EMS:** EmS F-A, S-B

### IATA/ICAO

**UN Number:** UN1940  
**UN Proper Shipping Name:** Thioglycolic Acid  
**Transport Hazard Class(es):** 8  
**Packing Group:** II

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

**Special Precautions for User:** None

**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

**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 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  
D1B Toxic Materials

## 16. OTHER INFORMATION

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

Not applicable

### 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 Compliance at 1-580-251-4335.

### Disclaimer Statement

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