

# **SAFETY DATA SHEET**

according to Regulation (EC) No. 453/2010

## **FERRIC CHLORIDE SOLUTION**

Revision Date: 30-Nov-2010

Revision Number: 8

### **1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product Identifier****Product Name** FERRIC CHLORIDE SOLUTION**Relevant identified uses of the substance or mixture and uses advised against****Recommended Use** Crosslinker**Uses Advised Against** No information available**Details of the supplier of the safety data sheet**

Halliburton Energy Services  
Halliburton House, Howemoss Place  
Kirkhill Industrial Estate  
Dyce  
Aberdeen, AB21 0GN  
United Kingdom

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

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

For further information, please contact

**E-Mail address:** [fdunexchem@halliburton.com](mailto:fdunexchem@halliburton.com)**Emergency telephone number**

+44 1224 795277 or +1 281 575 5000

**Emergency telephone \$45 - (EC)1272/2008**

<b>Europe</b>	<b>112</b>
<b>Denmark</b>	Poison Control Hotline (DK): +45 82 12 12 12
<b>France</b>	ORFILA (FR): + 01 45 42 59 59
<b>Germany</b>	Poison Center Berlin (DE): +49 030 30686 790
<b>Italy</b>	Poison Center, Milan (IT): +39 02 6610 1029
<b>Netherlands</b>	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
<b>Norway</b>	Poisons Information (NO): + 47 22 591300
<b>Poland</b>	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
<b>Spain</b>	Poison Information Service (ES): +34 91 562 04 20
<b>United Kingdom</b>	NHS Direct (UK): +44 0845 46 47

### **2. HAZARDS IDENTIFICATION**

**Classification of the substance or mixture****REGULATION (EC) No 1272/2008**

Acute Oral Toxicity	Category 4- H302
Skin Corrosion / irritation	Category 2- H315
Serious Eye Damage / Eye Irritation	Category 1- H318

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

For the full text of the R-phrases mentioned in this Section, see Section 16

**2. HAZARDS IDENTIFICATION****Classification**

Xn - Harmful.

**Risk Phrases**

R22 Harmful if swallowed.

R38 Irritating to skin.

R41 Risk of serious damage to eyes.

**Label Elements****Hazard Pictograms****Signal Word****Danger****Hazard Statements**

H318 - Causes serious eye damage

H315 - Causes skin irritation

H302 - Harmful if swallowed

**Contains****Substances**

Ferric chloride

**CAS Number**

7705-08-0

**Precautionary Statements - EU (§28, 1272/2008)**

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P362 - Take off contaminated clothing and wash before reuse

P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P330 - Rinse mouth

**Other Hazards**

None known

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	EINECS	CAS Number	PERCENT	EEC Classification	EU - CLP Substance Classification	REACH No.
Ferric chloride	231-729-4	7705-08-0	30 - 60%	Xn; R22 Xi; R38-R41	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Acute Tox. 4 (H302)	No data available

For the full text of the R-phrases mentioned in this Section, see Section 16

### 4. FIRST AID MEASURES

#### Description of 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.

##### 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.

##### 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.

##### 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.

#### Most Important symptoms and effects, both acute and delayed

May cause eye burns. May cause skin irritation. May be harmful if swallowed.

#### Indication of any immediate medical attention and special treatment needed

##### Notes to Physician

Treat symptomatically

### 5. FIREFIGHTING MEASURES

#### Extinguishing media

##### Suitable Extinguishing Media

All standard fire fighting media

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

None known.

#### Special hazards arising from the substance of mixture

##### Special Exposure Hazards

Decomposition in fire may produce toxic gases.

#### Advice for firefighters

##### Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.

See Section 12 for additional information

#### Environmental precautions

Prevent from entering sewers, waterways, or low areas.

#### Methods and material for containment and cleaning up

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.

#### Reference to other sections

See Section 12 for additional information.

## 7. HANDLING AND STORAGE

### Precautions for Safe Handling

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

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

### Conditions for safe storage, including any incompatibilities

Store away from alkalis. Store away from oxidizers. Store in a cool, dry location. Keep from excessive heat. Product has a shelf life of 24 months.

### Specific End Use(s)

#### Exposure Scenario

No information available

#### Other Guidelines

No information available

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Substances	EU	UK OEL	Netherlands	France OEL	Germany MAK/TRK
Ferric chloride	Not applicable	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	Not applicable	Not applicable

Substances	Italy	Poland	Hungary	Czech Republic	Denmark
Ferric chloride	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

### Derived No Effect Level (DNEL)

No information available.

### Predicted No Effect Concentration (PNEC)

No information available.

### Exposure controls

#### Engineering Controls

Use in a well ventilated area.

#### Personal protective equipment

##### Respiratory Protection

Use approved respirator.

##### Hand Protection

Impervious rubber 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.

#### Environmental Exposure Controls

No information available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Physical State:** Liquid

**Color:** Red brown

**Odor:** Mild acidic

**Odor Threshold:** No information available

#### Property

#### Values

#### Remarks/ Method

##### pH:

1

##### Melting Point/Range

No data available

##### Freezing Point/Range (C):

No data available

##### Boiling Point/Range

No data available

##### Flash Point

No data available

##### Evaporation rate

No data available

##### Vapor Pressure

No data available

##### Vapor Density

No data available

##### Specific Gravity

1.43

##### Water Solubility

Soluble in water

##### Solubility in other solvents

No data available

##### Partition coefficient: n-octanol/water

No data available

##### Autoignition Temperature

No data available

##### Decomposition Temperature

No data available

##### Viscosity

No data available

##### Explosive Properties

No information available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Oxidizing Properties

No information available

### Other information

#### VOC Content (%)

No data available

## 10. STABILITY AND REACTIVITY

### Reactivity

Not applicable

### Chemical Stability

Stable

### Possibility of Hazardous Reactions

Will Not Occur

### Conditions to Avoid

None anticipated

### Incompatible Materials

Strong oxidizers. Contact with metals. Concrete. Strong acids.

### Hazardous Decomposition Products

Hydrogen chloride.

## 11. TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Acute Toxicity

##### Inhalation

Causes severe respiratory irritation.

##### Eye Contact

May cause permanent eye damage. May cause eye tissue discoloration.

##### Skin Contact

May cause skin irritation.

##### Ingestion

May be fatal if swallowed. May cause abdominal pain, vomiting, nausea, and diarrhea. May cause liver and kidney damage. May affect the blood and blood system.

**Chronic Effects/Carcinogenicity** Prolonged or repeated exposure may cause liver, kidney and blood effects.

Substances	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ferric chloride	316 mg/kg	No data available	No data available

## 12. ECOLOGICAL INFORMATION

### Toxicity

#### Ecotoxicity Effects

Substances	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Ferric chloride	No information available	LC50: 20.26 mg/L (Lepomis macrochirus)	No information available	EC50: 27.9 mg/L (Daphnia magna)

### Persistence and degradability

No information available

### Bioaccumulative potential

No information available

### Mobility in soil

No information available

**Results of PBT and vPvB assessment**

No information available.

**Other adverse effects****Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****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****IMDG/IMO**

**UN Number:** UN2582,  
**UN Proper Shipping Name:** Ferric Chloride Solution  
**Transport Hazard Class(es):** , 8  
**Packing Group:** , III  
**EMS:** EmS F-A, S-B

**RID**

**UN Number:** UN2582,  
**UN Proper Shipping Name:** Ferric Chloride Solution  
**Transport Hazard Class(es):** , 8  
**Packing Group:** , III

**ADR**

**UN Number:** UN2582,  
**UN Proper Shipping Name:** Ferric Chloride Solution  
**Transport Hazard Class(es):** , 8  
**Packing Group:** , III

**IATA/ICAO**

**UN Number:** UN2582,  
**UN Proper Shipping Name:** Ferric Chloride Solution  
**Transport Hazard Class(es):** , 8  
**Packing Group:** , III

**Special Precautions for User**

None

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture****International Inventories****EINECS Inventory**

This product, and all its components, complies with EINECS

**US TSCA Inventory**

All components listed on inventory or are exempt.

**Canadian DSL Inventory**

All components listed on inventory or are exempt.

**Legend****TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List**Germany, Water Endangering  
Classes (WGK)**

WGK 1: Low hazard to waters.

**Chemical Safety Assessment**

No information available

<b>16. OTHER INFORMATION</b>
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**Full text of R-phrases referred to under Sections 2 and 3**

R22 Harmful if swallowed.

R38 Irritating to skin.

R41 Risk of serious damage to eyes.

**Key literature references and sources for data**[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)**Revision Date:** 30-Nov-2010**Revision Note** Not applicable**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006****Disclaimer Statement**

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**End of Safety Data Sheet**