



## Material Safety Data Sheet

Creation Date 08-Feb-2010

Revision Date 27-Nov-2012

Revision Number 2

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name** Ferric chloride hexahydrate  
**Cat No.** I86-3; I86-10; I88-100; I88-500  
**Synonyms** Iron(III) chloride hexahydrate (Lumps/Technical/Certified ACS)  
**Recommended Use** Laboratory chemicals

**Company** Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number**  
CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. HAZARDS IDENTIFICATION

#### DANGER!

#### Emergency Overview

Causes burns by all exposure routes. Harmful if swallowed. Hygroscopic.

**Appearance** Dark yellow

**Physical State** Solid

**odor** odorless

**Target Organs** Skin, Eyes, Respiratory system, Gastrointestinal tract (GI), Liver, Kidney, Blood

#### Potential Health Effects

##### Acute Effects

##### Principle Routes of Exposure

###### Eyes

Causes burns.

###### Skin

Causes burns. May be harmful in contact with skin.

###### Inhalation

Causes burns. May be harmful if inhaled.

###### Ingestion

Harmful if swallowed. Causes burns.

##### Chronic Effects

Experiments have shown reproductive toxicity effects on laboratory animals. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

**Aggravated Medical Conditions** No information available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Haz/Non-haz

Component	CAS-No	Weight %
Iron (III) chloride hexahydrate	10025-77-1	100

### 4. FIRST AID MEASURES

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Notes to Physician</b>	Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

<b>Flash Point</b>	Not applicable
<b>Method</b>	No information available.
<b>Autoignition Temperature</b>	No information available.
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable Extinguishing Media</b>	No information available.
<b>Hazardous Combustion Products</b>	No information available.
<b>Sensitivity to mechanical impact</b>	No information available.
<b>Sensitivity to static discharge</b>	No information available.
<b>Specific Hazards Arising from the Chemical</b>	
Containers may explode when heated.	
<b>Protective Equipment and Precautions for Firefighters</b>	
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.	

**NFPA**                      **Health** 3                      **Flammability** 0                      **Instability** 1                      **Physical hazards** N/A

### 6. ACCIDENTAL RELEASE MEASURES

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<b>Personal Precautions</b>	Use personal protective equipment. Avoid dust formation. Remove all sources of ignition.
<b>Environmental Precautions</b>	Should not be released into the environment.
<b>Methods for Containment and Clean Up</b>	Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Remove all sources of ignition.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Wear personal protective equipment. Use only under a chemical fume hood. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Engineering Measures</b>	Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Exposure Guidelines</b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Iron (III) chloride hexahydrate	TWA: 1 mg/m <sup>3</sup>	(Vacated) TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Iron (III) chloride hexahydrate	TWA: 1.0 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>	

**NIOSH IDLH:** *Immediately Dangerous to Life or Health*

### Personal Protective Equipment

#### **Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

#### **Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

#### **Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Solid
<b>Appearance</b>	Dark yellow
<b>odor</b>	odorless
<b>Odor Threshold</b>	No information available.
<b>pH</b>	2 0.1M in water
<b>Vapor Pressure</b>	negligible
<b>Vapor Density</b>	No information available.
<b>Viscosity</b>	No information available.
<b>Boiling Point/Range</b>	280 - 285°C / 536 - 545°F

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Melting Point/Range</b>	37°C / 98.6°F
<b>Decomposition temperature</b>	No information available.
<b>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	negligible
<b>Specific Gravity</b>	1.82 (H <sub>2</sub> O=1)
<b>Solubility</b>	Soluble in water
<b>log Pow</b>	No data available
<b>Molecular Weight</b>	270.29
<b>Molecular Formula</b>	Cl <sub>3</sub> Fe . 6 H <sub>2</sub> O

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	Hygroscopic. Stable under normal conditions.
<b>Conditions to Avoid</b>	Avoid dust formation. Incompatible products. Excess heat. Exposure to moist air or water.
<b>Incompatible Materials</b>	Strong oxidizing agents, Metals
<b>Hazardous Decomposition Products</b>	Hydrogen chloride gas, Chlorine, Thermal decomposition can lead to release of irritating gases and vapors
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur
<b>Hazardous Reactions .</b>	None under normal processing.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

**Product Information** See actual entry in RTECS for complete information.

### **Component Information**

**Irritation** Causes burns by all exposure routes

**Toxicologically Synergistic Products** No information available.

### Chronic Toxicity

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.

**Mutagenic Effects** Mutagenic effects have occurred in humans.

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**Other Adverse Effects** The toxicological properties have not been fully investigated.. See actual entry in RTECS for complete information.

**Endocrine Disruptor Information** No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

. Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Iron (III) chloride hexahydrate	Not listed	22 mg/l 96H (anh subst)	Not listed	9.6 mg/l 48H (anh subst)

**Persistence and Degradability** No information available

**Bioaccumulation/ Accumulation** No information available

**Mobility**

Component	log Pow
Iron (III) chloride hexahydrate	4

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

**14. TRANSPORT INFORMATION**

**DOT**

**UN-No** UN3260  
**Proper Shipping Name** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.  
**Proper technical name** Iron (III) chloride hexahydrate  
**Hazard Class** 8  
**Packing Group** III

**TDG**

**UN-No** UN3260  
**Proper Shipping Name** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.  
**Hazard Class** 8  
**Packing Group** III

**IATA**

### 14. TRANSPORT INFORMATION

**UN-No** UN3260  
**Proper Shipping Name** Corrosive solid, acidic, inorganic, n.o.s  
**Hazard Class** 8  
**Packing Group** III

#### IMDG/IMO

**UN-No** UN3260  
**Proper Shipping Name** Corrosive solid, acidic, inorganic, n.o.s  
**Hazard Class** 8  
**Packing Group** III

### 15. REGULATORY INFORMATION

#### International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Iron (III) chloride hexahydrate	-	-	-	-	-		X	X	X	X	-

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

#### U.S. Federal Regulations

**TSCA 12(b)** Not applicable

#### SARA 313

Not applicable

#### SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

#### Clean Water Act

**Clean Air Act**

Not applicable

**OSHA**

Not applicable

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Iron (III) chloride hexahydrate	-	-	X	-	X

**U.S. Department of Transportation**

Reportable Quantity (RQ): Y  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class**

D2A Very toxic materials  
 E Corrosive material



**16. OTHER INFORMATION**

**Prepared By** Regulatory Affairs  
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**Creation Date** 08-Feb-2010

**Print Date** 27-Nov-2012

**Revision Summary** (M)SDS sections updated 14

**Disclaimer**

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of MSDS**