1. Identification

Product Name: Ferric chloride hexahydrate

Cat No.: I88-100; I88-500

Synonyms: Ferric chloride hexahydrate

Recommended Use: Laboratory chemicals.

Uses advised against: No Information available

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazardous Substance</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin Corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity - (repeated exposure)</td>
<td>Category 2</td>
</tr>
<tr>
<td>Target Organs - Kidney, Liver, Blood.</td>
<td></td>
</tr>
</tbody>
</table>

Label Elements

Signal Word

Danger

Hazard Statements

Harmful if swallowed
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye damage
May cause damage to organs through prolonged or repeated exposure
Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Response
Get medical attention/advice if you feel unwell
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Skin
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>10025-77-1</td>
<td>&gt;95</td>
</tr>
<tr>
<td>Iron(III) chloride</td>
<td>7705-08-0</td>
<td>-</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.
Ingestion
Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms/effects
Causes eye burns. May cause allergic skin reaction. Causes severe eye damage. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

Notes to Physician
Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media
No information available

Flash Point
Not applicable

Method
No information available

Autoignition Temperature
No information available

Explosion Limits
Upper
No data available

Lower
No data available

Sensitivity to Mechanical Impact
No information available

Sensitivity to Static Discharge
No information available

Specific Hazards Arising from the Chemical
Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. May ignite combustibles (wood paper, oil, clothing, etc.). In the event of fire and/or explosion do not breathe fumes. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Hydrogen chloride gas Chlorine Metal oxides

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

Personal Precautions
Use personal protective equipment. Avoid dust formation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions
Should not be released into the environment. See Section 12 for additional ecological information. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not allow material to contaminate ground water system.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling
Wear personal protective equipment. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest. Do not taste or swallow. Use only under a chemical fume hood.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep away from water.

8. Exposure controls / personal protection

Exposure Guidelines
9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Component</th>
<th>Physical State</th>
<th>Appearance</th>
<th>Odor</th>
<th>Odor Threshold</th>
<th>pH</th>
<th>Melting Point/Range</th>
<th>Boiling Point/Range</th>
<th>Flash Point</th>
<th>Evaporation Rate</th>
<th>Flammability (solid,gas)</th>
<th>Flammability or explosive limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>Solid</td>
<td>Dark yellow</td>
<td>No information available</td>
<td>No information available</td>
<td>2 0.1M in water</td>
<td>37 °C / 98.6 °F</td>
<td>280 - 285 °C / 536 - 545 °F</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>No information available</td>
<td>No data available</td>
</tr>
<tr>
<td>Iron(III) chloride</td>
<td>Solid</td>
<td>Dark yellow</td>
<td>No information available</td>
<td>No information available</td>
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<td>37 °C / 98.6 °F</td>
<td>280 - 285 °C / 536 - 545 °F</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>No information available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Legend**

ACGIH - American Conference of Governmental Industrial Hygienists  
OSHA - Occupational Safety and Health Administration  
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

**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.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

10. Stability and reactivity
Reactive Hazard: None known, based on information available.

Stability: Hygroscopic.

Conditions to Avoid: Avoid dust formation. Incompatible products. Excess heat. Exposure to air or moisture over prolonged periods.

Incompatible Materials: Strong oxidizing agents, Metals, Strong bases.

Hazardous Decomposition Products: Hydrogen chloride gas, Chlorine, Metal oxides.

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: None under normal processing.

### 11. Toxicological information

#### Acute Toxicity

<table>
<thead>
<tr>
<th>Component Information</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>LD50 = 900 mg/kg (Rat)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Iron(III) chloride</td>
<td>450 mg/kg (Rat)</td>
<td>316 mg/kg (Rat)</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products:
No information available.

#### Irritation

Causes eye burns, Irritating to skin, May cause irritation of respiratory tract.

#### Sensitization

No information available.

#### Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>10025-77-1</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Iron(III) chloride</td>
<td>7705-08-0</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

##### Mutagenic Effects

No information available.

##### Reproductive Effects

No information available.

##### Developmental Effects

No information available.

##### Teratogenicity

No information available.

STOT - Single exposure: None known

STOT - repeated exposure: Kidney Liver Blood

#### Aspiration hazard

No information available.

#### Symptoms / effects, both acute and delayed

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

#### Endocrine Disruptor Information

No information available.

### Other Adverse Effects

The toxicological properties have not been fully investigated.

### 12. Ecological information

Ecotoxicity
Do not empty into drains. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>Not listed</td>
<td>22 mg/l 96H (anh subst)</td>
<td>Not listed</td>
<td>9.6 mg/l 48H (anh subst)</td>
</tr>
<tr>
<td>Iron(III) chloride</td>
<td>Not listed</td>
<td>LC50: = 75.6 mg/L, 96h static (Gambusa affinis) LC50: 20.95 - 22.56 mg/L, 96h semi-static (Pimephales promelas) LC50: = 20.26 mg/L, 96h semi-static (Lepomis macrochirus)</td>
<td>Not listed</td>
<td>EC50: = 9.6 mg/L, 48h Static (Daphnia magna) EC50: = 27.9 mg/L, 48h (Daphnia magna)</td>
</tr>
</tbody>
</table>

Persistence and Degradability: May persist based on information available.

Bioaccumulation/ Accumulation: No information available.

Mobility: Will likely be mobile in the environment due to its water solubility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>4</td>
</tr>
<tr>
<td>Iron(III) chloride</td>
<td>-4</td>
</tr>
</tbody>
</table>

### 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**

- **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

All of the components in the product are on the following Inventory lists: X = listed

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
</tbody>
</table>
Iron(III) chloride  
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.
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 Hazard Categories

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

CWA (Clean Water Act)

<table>
<thead>
<tr>
<th>Component</th>
<th>CWA - Hazardous Substances</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron(III) chloride</td>
<td>X</td>
<td>1000 lb</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Clean Air Act  
Not applicable

OSHA  
Occupational Safety and Health Administration
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)

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron(III) chloride</td>
<td>1000 lb</td>
<td>-</td>
</tr>
</tbody>
</table>

California Proposition 65  
This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (III) chloride hexahydrate</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Iron(III) chloride</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

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
- E  Corrosive material
- D2B  Toxic materials
- D1B  Toxic materials

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date
08-Feb-2010

Revision Date
04-May-2016

Print Date
04-May-2016

Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard
replacing the current legislation under 29 CFR 1910.1200 to align with the Globally
Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided in 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 guidance for safe handling, use, processing, storage,
transportation, disposal and release and is not to be considered 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
materials or in any process, unless specified in the text

End of SDS