



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/12/2014

Version 1.3

## SECTION 1. Identification

### Product identifier

Product number	803945
Product name	Iron(III) chloride anhydrous for synthesis
CAS-No.	7705-08-0

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for synthesis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Corrosive to Metals, Category 1, H290  
Acute toxicity, Category 4, Oral, H302  
Skin irritation, Category 2, H315  
Serious eye damage, Category 1, H318  
Skin sensitization, Category 1, H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

#### Hazard pictograms



Signal Word  
Danger

#### Hazard Statements

H290 May be corrosive to metals.

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H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.

### *Precautionary Statements*

P280 Wear protective gloves.  
P280 Wear eye protection.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

### **Other hazards**

None known.

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## **SECTION 3. Composition/information on ingredients**

Formula	FeCl <sub>3</sub>	Cl <sub>3</sub> Fe (Hill)
Molar mass	162.20 g/mol	

### **Hazardous ingredients**

*Chemical Name ( Concentration)*

CAS-No.

*iron(III) chloride ( >= 90 % - <= 100 % )*

7705-08-0

Exact percentages are being withheld as a trade secret.

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## **SECTION 4. First aid measures**

### **Description of first-aid measures**

*Inhalation*

After inhalation: fresh air.

*Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

*Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

*Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

### **Most important symptoms and effects, both acute and delayed**

irritant effects, Nausea, Vomiting

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The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

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

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

#### *Suitable extinguishing media*

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### *Unsuitable extinguishing media*

Water, Foam

### Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Hydrogen chloride gas

May not get in touch with:

Water

Caution! in contact with water product releases:

hydrochloric acid

### Advice for firefighters

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### Environmental precautions

Do not empty into drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

Keep workplace dry. Do not allow product to come into contact with water.

### Conditions for safe storage, including any incompatibilities

*Requirements for storage areas and containers*

No metal or light-weight-metal containers.

Tightly closed. Dry.

Store at +15°C to +25°C (+59°F to +77°F).

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>iron(III) chloride 7705-08-0</i>			
ACGIH	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	Expressed as: as Fe
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m <sup>3</sup>	Expressed as: as Fe
Z1A	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	Expressed as: as Fe

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

#### *Eye/face protection*

Tightly fitting safety goggles

#### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### *Other protective equipment:*

protective clothing

#### *Respiratory protection*

required when dusts are generated.

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Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. Physical and chemical properties

Physical state	powder
Color	green to black
Odor	stinging
Odor Threshold	No information available.
pH	1 at 200 g/l 68 °F ( 20 °C)
Melting point	306 °C (decomposition)
Boiling point	No information available.
Flash point	does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapor pressure	1 hPa at 68 °F ( 20 °C)
Relative vapor density	No information available.
Density	2.89 g/cm <sup>3</sup> at 77 °F ( 25 °C)
Relative density	No information available.
Water solubility	920 g/l at 68 °F ( 20 °C) Hydrolysis
Partition coefficient: n-octanol/water	No information available.

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Autoignition temperature	No information available.
Decomposition temperature	> 392 °F ( > 200 °C)
Viscosity, dynamic	not applicable
Explosive properties	Not classified as explosive.
Oxidizing properties	Oxidizing potential
Sublimation point	579 °F ( 304 °C) at 1,000 hPa
Ignition temperature	not combustible
Bulk density	ca. 1,000 kg/m <sup>3</sup>
Viscosity, kinematic	not applicable
Corrosion	May be corrosive to metals.

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**SECTION 10. Stability and reactivity**

**Reactivity**

See below

**Chemical stability**

sublimable  
sensitive to moisture

**Possibility of hazardous reactions**

Risk of explosion with:

Alkali metals, Ethylene oxide

Violent reactions possible with:

ALLYL CHLORIDE

Aluminum, with, Heat.

Generates dangerous gases or fumes in contact with:

Water

**Conditions to avoid**

Strong heating (decomposition).

Exposure to moisture.

**Incompatible materials**

Copper, Light metals

**Hazardous decomposition products**

in the event of fire: See section 5.

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**SECTION 11. Toxicological information**

**Information on toxicological effects**

*Likely route of exposure*

Inhalation, Eye contact, Skin contact, Ingestion

*Target Organs*

Eyes

Skin

Respiratory system

Liver

gastrointestinal tract

*Acute oral toxicity*

LD50 rat: 316 mg/kg (RTECS)

absorption

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract., Nausea, Vomiting

*Acute inhalation toxicity*

Symptoms: Possible damages:, mucosal irritations

*Acute dermal toxicity*

LD50 Dermal rat: > 2,000 mg/kg

(External MSDS)

*Skin irritation*

rabbit

Result: irritating

(IUCLID)

Causes skin irritation.

*Eye irritation*

rabbit

Result: Severe irritations

OECD Test Guideline 405

Causes serious eye damage.

*Sensitization*

May cause an allergic skin reaction.

*Genotoxicity in vivo*

In vivo micronucleus test

mouse

Result: negative

(External MSDS)

*Genotoxicity in vitro*

Ames test

Result: negative

Method: OECD Test Guideline 471

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Mutagenicity (mammal cell test): micronucleus.

Result: negative

Method: OECD Test Guideline 405

*Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

### Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### Further information

Decomposition of the substance with tissue moisture.

The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50 *Lepomis macrochirus* (Bluegill sunfish): 20.3 mg/l; 96 h (External MSDS)

*Toxicity to daphnia and other aquatic invertebrates*

Immobilization EC50 *Daphnia magna* (Water flea): 9.6 mg/l; 48 h  
OECD Test Guideline 202

*Toxicity to algae*

ErC50 *Pseudokirchneriella subcapitata* (green algae): 6.9 mg/l; 72 h  
OECD Test Guideline 201

NOEC *Pseudokirchneriella subcapitata* (green algae): 2.4 mg/l; 72 h  
OECD Test Guideline 201



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### *Toxicity to fish ( Chronic toxicity)*

NOEC Pimephales promelas (fathead minnow): 0.33 mg/l; 33 d  
(External MSDS)

### *Toxicity to daphnia and other aquatic invertebrates ( Chronic toxicity)*

NOEC Daphnia magna (Water flea): 0.7 mg/l; 21 d  
(External MSDS)

### **Persistence and degradability**

No information available.

### **Bioaccumulative potential**

No information available.

### **Mobility in soil**

No information available.

### *Additional ecological information*

Discharge into the environment must be avoided.

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## **SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## **SECTION 14. Transport information**

### **Land transport (DOT)**

UN number	UN 1773
Proper shipping name	FERRIC CHLORIDE, ANHYDROUS
Class	8
Packing group	III
Environmentally hazardous	--

### **Air transport (IATA)**

UN number	UN 1773
Proper shipping name	FERRIC CHLORIDE, ANHYDROUS
Class	8
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

### **Sea transport (IMDG)**

UN number	UN 1773
Proper shipping name	FERRIC CHLORIDE, ANHYDROUS
Class	8
Packing group	III
Environmentally hazardous	--

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### *Ingredients*

iron(III) chloride

### **New Jersey Right To Know**

#### *Ingredients*

iron(III) chloride

### **California Prop 65 Components**

WARNING: this product contains a chemical known in the State of California to cause cancer.

#### *Ingredients*

nickel(II) chloride

### **Notification status**

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

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## **SECTION 16. Other information**

### **Training advice**

Provide adequate information, instruction and training for operators.

### **Full text of H-Statements referred to under sections 2 and 3.**

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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