

## SAFETY DATA SHEET

Version 5.4

Revision Date 02/26/2015

Print Date 03/05/2015

## 1. PRODUCT AND COMPANY IDENTIFICATION

## 1.1 Product identifiers

Product name : Iron(III) chloride hexahydrate

Product Number : 236489  
Brand : Sigma-Aldrich

CAS-No. : 10025-77-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

## 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USATelephone : +1 800-325-5832  
Fax : +1 800-325-5052

## 1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

## 2. HAZARDS IDENTIFICATION

## 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to metals (Category 1), H290  
Acute toxicity, Oral (Category 4), H302  
Skin irritation (Category 2), H315  
Serious eye damage (Category 1), H318

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

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H290 : May be corrosive to metals.  
H302 : Harmful if swallowed.  
H315 : Causes skin irritation.  
H318 : Causes serious eye damage.

Precautionary statement(s)

P234 : Keep only in original container.  
P264 : Wash skin thoroughly after handling.  
P270 : Do not eat, drink or smoke when using this product.  
P280 : Wear eye protection/ face protection.  
P280 : Wear protective gloves.  
P301 + P312 + P330 : IF SWALLOWED: Call a POISON CENTER or doctor/ physician if youP302 + P352 : feel unwell. Rinse mouth.  
P305 + P351 + P338 + P310 : IF ON SKIN: Wash with plenty of soap and water.  
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.  
P332 + P313 : If skin irritation occurs: Get medical advice/ attention.  
P362 : Take off contaminated clothing and wash before reuse.  
P390 : Absorb spillage to prevent material damage.  
P406 : Store in corrosive resistant stainless steel container with a resistant inner liner.  
P501 : Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

## 3.1 Substances

Synonyms : Ferric chloride hexahydrate

Formula :  $\text{Cl}_3\text{Fe} \cdot 6\text{H}_2\text{O}$ 

Molecular weight : 270.30 g/mol

CAS-No. : 10025-77-1

EC-No. : 231-729-4

## Hazardous components

Component	Classification	Concentration
Iron trichloride hexahydrate	Met. Corr. 1; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; H290, H302, H315, H318	<= 100 %

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

## 4. FIRST AID MEASURES

## 4.1 Description of first aid measures

## General advice

Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

## If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

## In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

## In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

## If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

## 5. FIREFIGHTING MEASURES

## 5.1 Extinguishing media

## Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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Safety

**5.2 Special hazards arising from the substance or mixture**

Hydrogen chloride gas, Iron oxides

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.  
Provide appropriate exhaust ventilation at places where dust is formed.  
For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Store under inert gas. Keep container tightly closed in a dry and well-ventilated place.

hygroscopic

Storage class (TRGS 510): Non-combustible, corrosive hazardous materials

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Components with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Iron trichloride hexahydrate	10025-77-1	TWA	1.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Skin irritation varies		
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

**8.2 Exposure controls****Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment****Eye/face protection**

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Full contact**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

**Splash contact**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Do not let product enter drains.

**9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

- |  |   |
|--|---|
| a) Appearance                              | Form: solid<br>Colour: yellow             |
| b) Odour                                   | No data available                         |
| c) Odour Threshold                         | No data available                         |
| d) pH                                      | No data available                         |
| e) Melting point/freezing point            | Melting point/range: 37 °C (99 °F) - lit. |
| f) Initial boiling point and boiling range | 280 - 285 °C (536 - 545 °F) - lit.        |
| g) Flash point                             | No data available                         |
| h) Evaporation rate                        | No data available                         |
| i) Flammability (solid, gas)               | No data available                         |
| j) Upper/lower flammability or             | No data available                         |

## explosive limits

- k) Vapour pressure 1 hPa (1 mmHg) at 194 °C (381 °F)
- l) Vapour density No data available
- m) Relative density 1.820 g/cm<sup>3</sup>
- n) Water solubility No data available
- o) Partition coefficient: n-octanol/water No data available
- p) Auto-ignition temperature No data available
- q) Decomposition temperature No data available
- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

**9.2 Other safety information**

No data available

**10. STABILITY AND REACTIVITY****10.1 Reactivity**

No data available

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to avoid**

Exposure to moisture

**10.5 Incompatible materials**

Strong oxidizing agents, Forms shock-sensitive mixtures with certain other materials., Sodium/sodium oxides, Potassium

**10.6 Hazardous decomposition products**Other decomposition products - No data available  
In the event of fire: see section 5**11. TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute toxicity**

LD50 Oral - Rat - 900 mg/kg

Inhalation: No data available

Dermal: No data available

No data available

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: NO5425000

Overdose of iron compounds may have a corrosive effect on the gastrointestinal mucosa and be followed by necrosis, perforation, and stricture formation. Several hours may elapse before symptoms that can include epigastric pain, diarrhea, vomiting, nausea, and hematemesis occur. After apparent recovery a person may experience metabolic acidosis, convulsions, and coma hours or days later. Further complications may develop leading to acute liver necrosis that can result in death due to hepatic coma., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

No data available

**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**  
Dispose of as unused product.

#### 14. TRANSPORT INFORMATION

##### DOT (US)

UN number: 3260 Class: 8 Packing group: III  
Proper shipping name: Corrosive solid, acidic, inorganic, n.o.s. (Iron trichloride hexahydrate) (Iron trichloride hexahydrate)  
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

##### IMDG

UN number: 3260 Class: 8 Packing group: III EMS-No: F-A, S-B  
Proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Iron trichloride hexahydrate) (Iron trichloride hexahydrate)

##### IATA

UN number: 3260 Class: 8 Packing group: III  
Proper shipping name: Corrosive solid, acidic, inorganic, n.o.s. (Iron trichloride hexahydrate) (Iron trichloride hexahydrate)

#### 15. REGULATORY INFORMATION

##### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

##### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

##### SARA 311/312 Hazards

Acute Health Hazard

##### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Iron trichloride hexahydrate	10025-77-1	1993-04-24

##### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Iron trichloride hexahydrate	10025-77-1	1993-04-24

##### New Jersey Right To Know Components

	CAS-No.	Revision Date
Iron trichloride hexahydrate	10025-77-1	1993-04-24

##### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

#### 16. OTHER INFORMATION

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

Acute Tox.	Acute toxicity
Eye Dam.	Serious eye damage
H290	May be corrosive to metals
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
Met. Corr.	Corrosive to metals
Skin Irrit.	Skin irritation

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Delivery 0849990258-000030 Purchase Order 2320GD62

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##### HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

##### NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

##### Further Information

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##### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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