

## SAFETY DATA SHEET

according to the Global Harmonized System (and with all of the information required by the HPR)

Revision Date 04/01/2020

Version 1.10

### SECTION 1. Identification

#### Product identifier

Product number	103943
Product name	Iron(III) chloride hexahydrate for analysis EMSURE® ACS, Reag. Ph Eur
CAS-No.	10025-77-1

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

Identified uses	Reagent for analysis
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#### Details of the supplier of the safety data sheet

Company	Millipore (Canada) Ltd.   2149 Winston Park Dr.   Oakville   Ontario L6H 6J8   Canada   General Inquiries: +1 905 829 9500   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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<b>Emergency telephone</b>	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

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

#### GHS-Labeling

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## Hazard pictograms



## Signal Word

Danger

## Hazard Statements

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

## Precautionary Statements

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 protective gloves/ eye protection/ face protection.

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

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.

P310 Immediately call a POISON CENTER/doctor.

P321 Specific treatment (see supplemental first aid instructions on this label).

P330 Rinse mouth.

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.

## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Formula	$\text{FeCl}_3 \cdot 6 \text{H}_2\text{O}$	$\text{Cl}_3\text{Fe} \cdot 6 \text{H}_2\text{O}$ (Hill)
Molar mass	270.33 g/mol	

## Hazardous ingredients

Chemical name (Concentration)

CAS-No.

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*iron(III) chloride hexahydrate (>= 90 % - <= 100 % )*  
10025-77-1

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### SECTION 4. First aid measures

#### Description of first-aid measures

##### *Inhalation*

After inhalation: fresh air.

##### *Skin contact*

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

##### *Eye contact*

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

##### *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

Cough, Nausea, Vomiting, cardiovascular disorders, Shortness of breath  
Irritation and corrosion  
Risk of serious damage to eyes.

#### 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*

For this substance/mixture no limitations of extinguishing agents are given.

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

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Hydrogen chloride gas

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### 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 inhalation of dusts. Avoid substance contact. 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 let product enter 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.

### Conditions for safe storage, including any incompatibilities

*Requirements for storage areas and containers*

No 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)

#### Components

Basis	Value	Threshold limits	Remarks
<i>iron(III) chloride hexahydrate 10025-77-1</i>			
CAD AB OEL	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	Expressed as: as Fe
CAD BC OEL	Short Term Exposure Limit (STEL):	2 mg/m <sup>3</sup>	Expressed as: as Fe
	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	Expressed as: as Fe
CAD MB OEL	Time Weighted Average (TWA):	1 mg/m <sup>3</sup>	Expressed as: as Fe
CAD ON OEL	Time Weighted Average (TWAEV):	1 mg/m <sup>3</sup>	Expressed as: as Fe
OEL (QUE)	Time Weighted Average (TWA):	1.0 mg/m <sup>3</sup>	Expressed as: as Fe
CAD SK OEL	15 minute average contamination limit:	3 mg/m <sup>3</sup>	Expressed as: as Fe
	8 hour average contamination limit:	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

full contact:

Glove material: Nitrile rubber  
Glove thickness: 0.11 mm  
Break through time: 480 min

splash contact:

Glove material: Nitrile rubber  
Glove thickness: 0.11 mm  
Break through time: 480 min

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatrill® L (full contact), KCL 741 Dermatrill® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests according to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment:*  
protective clothing

*Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter B-(P2)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer.

These measures have to be properly documented.

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### SECTION 9. Physical and chemical properties

Physical state	solid
Color	tan
Odor	of chlorine
Odor Threshold	No information available.
pH	ca. 1.8 at 10 g/l 77 °F (25 °C)
Melting point	99 °F (37 °C)
Boiling point/boiling range	Not applicable
Flash point	does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.

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Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor pressure	No information available.
Relative vapor density	No information available.
Density	No information available.
Relative density	No information available.
Water solubility	920 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	not combustible
Bulk density	ca.600 - 1,200 kg/m <sup>3</sup>
Corrosion	May be corrosive to metals.

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### SECTION 10. Stability and reactivity

#### Reactivity

Corrosive in contact with metals

#### Chemical stability

sensitive to moisture

The product is chemically stable under standard ambient conditions (room temperature) .

#### Possibility of hazardous reactions

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Risk of explosion with:

Alkali metals, Ethylene oxide

### Conditions to avoid

Strong heating (decomposition).

Exposure to moisture.

### Incompatible materials

Mild steel

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*

Eye contact, Skin contact, Ingestion

*Acute oral toxicity*

LD50 Rat: 316 mg/kg (RTECS)

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

*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



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Causes serious eye damage.

*Repeated dose toxicity*

Subchronic toxicity

*Genotoxicity in vivo*

In vivo micronucleus test

Mouse

Result: negative

(External MSDS)

*Genotoxicity in vitro*

Ames test

Result: negative

Method: OECD Test Guideline 471

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 component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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**

After absorption:

cardiovascular disorders

Toxic effect on:

Kidney, Liver

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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

##### *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*

Product reacts with water.

The following may develop after reaction of the product with water:  
hydrochloric acid

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)

Not classified as dangerous in the meaning of transport regulations.

#### Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

#### Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

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### SECTION 15. Regulatory information

#### United States of America

#### Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

#### 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.

#### Labeling

*Hazard pictograms*



#### *Signal Word*

Danger

#### *Hazard Statements*

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H315 Causes skin irritation.

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H318 Causes serious eye damage.

### *Precautionary Statements*

#### Prevention

P280 Wear eye protection.

#### Response

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.

P313 Get medical advice/ attention.

### **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).

Revision Date 04/01/2020

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).

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