

**Safety Data Sheet**

according to UK REACH Regulation

**Iron(III)Chloride hexahydrate**

Revision date: 20.06.2023

Product code: 18790.xxxxx

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Iron(III)Chloride hexahydrate

Substance name: Iron(III) chloride hexahydrate  
REACH Registration Number: 01-2119497998-05-xxxx  
CAS No: 10025-77-1  
EC No: 600-047-2  
UFI: Q71P-G13H-4005-6VQA

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Use as laboratory reagent. Intended for scientific research and development.

**Uses advised against**

Any non-intended use.

**1.3. Details of the supplier of the safety data sheet**

Company name: MORPHISTO GmbH  
Street: Schumannstr. 142/144  
Place: D-63069 Offenbach  
Telephone: +49 (0) 69 / 400 3019-60  
Telefax: +49 (0) 69 / 400 3019-64  
e-mail: info@morphisto.de  
Contact person: Morphisto GmbH  
e-mail: gefahrstoffmanagement@morphisto.de  
Internet: http://www.morphisto.de

**1.4. Emergency telephone number:**

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GB CLP Regulation**

Met. Corr. 1; H290  
Acute Tox. 4; H302  
Skin Irrit. 2; H315  
Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****GB CLP Regulation****Signal word:** Danger**Pictograms:****Hazard statements**

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

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#### Precautionary statements

P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of 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.

#### Labelling of packages where the contents do not exceed 125 ml

Signal word: Danger

Pictograms:



#### Hazard statements

H318

#### Precautionary statements

P280-P305+P351+P338-P310

#### 2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB) at levels of 0.1% or higher. Ecological information: The substance/mixture does not contain any components that are considered to be hazardous according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in amounts of 0.1 % or more have endocrine disrupting properties. Toxicological information: The substance/mixture does not contain any components that are to be classified according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1 % or more have endocrine disrupting properties.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Sum formula:	FeCl <sub>3</sub> · 6 H <sub>2</sub> O
Molecular weight:	270,3 g/mol

#### Hazardous components

CAS No	Chemical name	Quantity
	EC No	Index No
	REACH No	
	Classification (GB CLP Regulation)	
10025-77-1	Iron(III) chloride hexahydrate	100 %
	600-047-2	01-2119497998-05-xxxx
	Met. Corr. 1, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1; H290 H302 H315 H318	

Full text of H and EUH statements: see section 16.

#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
10025-77-1	600-047-2	Iron(III) chloride hexahydrate	100 %
	dermal: LD50 = >2000 mg/kg; oral: LD50 = 500 mg/kg		

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

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**General information**

First aider: Pay attention to self-protection! Take off contaminated clothing. Remove affected person from the danger area and lay down.

**After inhalation**

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration.

**After contact with skin**

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure. Call a physician in any case!

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

**After ingestion**

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

**4.2. Most important symptoms and effects, both acute and delayed**

Corrosiveness. Irritation. Allergic reactions. Nausea. vomiting. Risk of serious damage to eyes.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.  
Atomized water. Foam. Extinguishing powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media**

High power water jet.

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

non-flammable. Hazardous decomposition products: Hydrogen chloride (HCl).

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Provide adequate ventilation. Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Clear danger zone. Follow emergency plan. Consult an expert.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. No special environmental measures are necessary. Clean contaminated articles and floor according to the environmental legislation.

**6.3. Methods and material for containment and cleaning up****For containment**

Cover drains. Take up mechanically.

**For cleaning up**

Take up mechanically. Avoid generation of dust.

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#### Other information

Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Advice on safe handling

Avoid exposure. Avoid dust formation. Do not breathe dust. Always close containers tightly after the removal of product.

#### Advice on protection against fire and explosion

No special fire protection measures are necessary. Usual measures for fire prevention.

#### Advice on general occupational hygiene

Wear suitable protective clothing. Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

#### Further information on handling

Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash it before reuse.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

Store in a dry place. Store in a closed container. Keep container tightly closed. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations.

Unsuitable container/equipment material: Metal.

#### Hints on joint storage

Do not store together with: food and feed. pharmaceuticals. Infectious substances. Radioactive substances. Explosive substances. Oxidizing substances. Oxidizing liquids. Organic peroxides. Self-reactive substances and mixtures. Pyrophoric solids. Substances which in contact with water form flammable gases. Ammonium nitrate and preparations containing ammonium nitrate.

#### Further information on storage conditions

Recommended storage temperature: 15 - 25°C.

### 7.3. Specific end use(s)

Use as laboratory reagent. Intended for scientific research and development.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
10025-77-1	Iron(III) chloride hexahydrate			
Worker DNEL, long-term		dermal	systemic	2,8 mg/kg bw/day

#### Additional advice on limit values

To date, no national critical limit values exist.

### 8.2. Exposure controls

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**Appropriate engineering controls**

Ensure adequate ventilation. If handled uncovered, arrangements with local exhaust ventilation have to be used. Use extractor hood (laboratory). Do not breathe dust. Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Individual protection measures, such as personal protective equipment**
**Eye/face protection**

Suitable eye protection: Eye glasses with side protection. EN 166.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Recommended material: NBR (Nitrile rubber). Thickness of material: >0,11mm. Breakthrough time >480 min.

**Skin protection**

Use of protective clothing. Lab apron.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection. In the case of the formation of dust.

Suitable respiratory protective equipment: particulates filter device (DIN EN 143). P2 Identification color: white

Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190).

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties**
**9.1. Information on basic physical and chemical properties**

Physical state:	solid	
Colour:	yellow brown	
Odour:	like: Chlorine (Cl <sub>2</sub> ).	
Melting point/freezing point:		37 °C
Boiling point or initial boiling point and boiling range:		not determined
Flammability:		not determined
Lower explosion limits:		not determined
Upper explosion limits:		not determined
Flash point:		not applicable
Decomposition temperature:		not determined
pH-Value:		<2
Viscosity / kinematic:		not determined
Water solubility: (at 20 °C)		900 g/L
Solubility in other solvents		not determined
Partition coefficient n-octanol/water:		not determined

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Vapour pressure:	not determined
Density (at 20 °C):	1,80 g/cm <sup>3</sup>
Bulk density (at 20 °C):	600 - 1200 kg/m <sup>3</sup>
Relative vapour density:	not determined

**9.2. Other information**
**Information with regard to physical hazard classes**
**Explosive properties**

The product is not: Explosive.

**Self-ignition temperature**

Solid:

not determined

Gas:

not applicable

**Other safety characteristics**

Evaporation rate:

not determined

Solvent separation test:

not determined

Solvent content:

not determined

Solid content:

not determined

Viscosity / dynamic:

not determined

Flow time:

not determined

**SECTION 10: Stability and reactivity**
**10.1. Reactivity**

Corrosive to metals. Possibility of hazardous reactions.

**10.2. Chemical stability**

This product is hygroscopic.

**10.3. Possibility of hazardous reactions**

Exothermic reaction with:Oxidizing agents, strong.

**10.4. Conditions to avoid**

Humidity. heat.

**10.5. Incompatible materials**

Metal. Aluminium.

**10.6. Hazardous decomposition products**

Decomposition products in case of fire: see section 5.

**SECTION 11: Toxicological information**
**11.1. Information on hazard classes as defined in GB CLP Regulation**
**Acute toxicity**

Harmful if swallowed.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
10025-77-1	Iron(III) chloride hexahydrate				
	oral	LD50 mg/kg	500	Rat	ECHA-Dossier
	dermal	LD50 mg/kg	>2000	Rat	ECHA-Dossier

**Irritation and corrosivity**

Causes skin irritation.

Causes serious eye damage.

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**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**11.2. Information on other hazards****Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to humans as it does not meet the criteria set out in section A of Regulation (EU) No 2017/2100

**SECTION 12: Ecological information****12.1. Toxicity**

Based on available data, the classification criteria are not met.

**12.2. Persistence and degradability**

The product has not been tested.

**12.3. Bioaccumulative potential**

There is no data available.

**12.4. Mobility in soil**

There is no data available.

**12.5. Results of PBT and vPvB assessment**

This substance does not meet the PBT/vPvB criteria of UK REACH.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

There is no data available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation. Observe Waste Directive 2008/98/EC. Product residues must be disposed of in accordance with national and regional regulations. Leave chemicals in original containers. Do not mix with other wastes. Uncleaned containers must be treated according to the product. Find out more about take-back systems for chemicals and packaging at [www.Retrologistik.de](http://www.Retrologistik.de) or use the address to contact us if you have any questions.

**Contaminated packaging**

Wash with plenty of water. Completely emptied packages can be recycled.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number or ID number:**

UN 3260

**14.2. UN proper shipping name:**

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.(Iron(III) chloride hexahydrate)

**14.3. Transport hazard class(es):**

8

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**14.4. Packing group:**

III

Hazard label:

8



Classification code:

C2

Special Provisions:

274

Limited quantity:

5 kg

Excepted quantity:

E1

Transport category:

3

Hazard No:

80

Tunnel restriction code:

E

**Other applicable information (land transport)**

UN3260, A?TZENDER SAURER ANORGANISCHER FESTER STOFF, N.A.G., (Eisen(III)-chlorid Hexahydrat), 8, III, (E)

**Inland waterways transport (ADN)**
**14.1. UN number or ID number:**

UN 3260

**14.2. UN proper shipping name:**

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Iron(III) chloride hexahydrate)

**14.3. Transport hazard class(es):**

8

**14.4. Packing group:**

III

Hazard label:

8



Classification code:

C2

Special Provisions:

274

Limited quantity:

5 kg

Excepted quantity:

E1

**Other applicable information (inland waterways transport)**

UN3260, A?TZENDER SAURER ANORGANISCHER FESTER STOFF, N.A.G., (Eisen(III)-chlorid Hexahydrat), 8, III, (E)

**Marine transport (IMDG)**
**14.1. UN number or ID number:**

UN 3260

**14.2. UN proper shipping name:**

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Iron(III) chloride hexahydrate)

**14.3. Transport hazard class(es):**

8

**14.4. Packing group:**

III

Hazard label:

8



Special Provisions:

223 274

Limited quantity:

5 kg

Excepted quantity:

E1

EmS:

F-A, S-B

Segregation group:

1 - acids

**Other applicable information (marine transport)**

UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., (Iron(III) chloride hexahydrate), 8, III

**Air transport (ICAO-TI/IATA-DGR)**
**14.1. UN number or ID number:**

UN 3260



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<b>14.2. UN proper shipping name:</b>	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Iron(III) chloride hexahydrate)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	III
Hazard label:	8



Special Provisions:	A3 A803
Limited quantity Passenger:	5 kg
Passenger LQ:	Y845
Excepted quantity:	E1
IATA-packing instructions - Passenger:	860
IATA-max. quantity - Passenger:	25 kg
IATA-packing instructions - Cargo:	864
IATA-max. quantity - Cargo:	100 kg

**Other applicable information (air transport)**

UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., (Iron(III) chloride hexahydrate), 8, III

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

Warning: After contact with water: strongly corrosive.

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

**SECTION 15: Regulatory information**
**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**
**EU regulatory information**

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**National regulatory information**

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	1 - slightly hazardous to water
Skin resorption/Sensitization:	Causes allergic hypersensitivity reactions.

**15.2. Chemical safety assessment**

 For the following substances of this mixture a chemical safety assessment has been carried out:  
 Iron(III) chloride hexahydrate

**SECTION 16: Other information**
**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,3,4,5,6,7,8,9,10,11,12,14,15,16.  
 Rev.: 1,00; 03.12.2020; Initial release.  
 Rev.: 1,10; 13.07.2022; general revision / adjustment section 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15  
 Rev. 1,2; 20.06.2023; general adjustment(s)

**Abbreviations and acronyms**

CLP: Classification, labelling and Packaging

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REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
CAS: Chemical Abstracts Service  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
IMDG: International Maritime Code for Dangerous Goods  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
IATA: International Air Transport Association  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

**Relevant H and EUH statements (number and full text)**

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

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.