

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: **5192**
Version: **6.0 en**
Replaces version of: 2023-09-20
Version: (5)

date of compilation: 2016-11-30
Revision: 2023-09-21

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

| | |
|---------------------------------|---|
| Identification of the substance | Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous |
| Article number | 5192 |
| EC number | 231-729-4 |
| CAS number | 7705-08-0 |

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

| | |
|---------------------------|---|
| Relevant identified uses: | Laboratory chemical Laboratory and analytical use Formulation [mixing] of preparations and/or re-packaging (excluding alloys) Intermediate Industrial uses Professional uses |
|---------------------------|---|

| | |
|-----------------------|---|
| Uses advised against: | Do not use for private purposes (household). Food, drink and animal feedingstuffs. |
|-----------------------|---|

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

| | |
|---|---|
| Competent person responsible for the safety data sheet: | Department Health, Safety and Environment |
|---|---|

| | |
|-----------------------------------|---|
| e-mail (competent person): | sicherheit@carlroth.de |
|-----------------------------------|---|

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|---|-----------|----------------------|--------------|---------|
| National Poisons Information Service City Hospital | Dudley Rd | B187QH Birmingham | 844 892 0111 | |

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5\%$, extra pure, anhydrous

article number: 5192

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|--|-----------|---------------------------|------------------|
| 2.16 | Substance or mixture corrosive to metals | 1 | Met. Corr. 1 | H290 |
| 3.10 | Acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| 3.2 | Skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 3.3 | Serious eye damage/eye irritation | 1 | Eye Dam. 1 | H318 |
| 3.4S | Skin sensitisation | 1 | Skin Sens. 1 | H317 |

For full text of abbreviations: see SECTION 16

2.2 Label elements

Labelling

Signal word

Danger

Pictograms

GHS05, GHS07



Hazard statements

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

Precautionary statements

Precautionary statements - prevention

P280 Wear protective gloves/eye protection

Precautionary statements - 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
P310 Immediately call a POISON CENTER/doctor

Hazardous ingredients for labelling: Nickel dichloride

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-------------------|--------------------|
| Name of substance | Iron(III) chloride |
| Molecular formula | FeCl ₃ |
| Molar mass | 162,2 g/mol |
| CAS No | 7705-08-0 |
| EC No | 231-729-4 |

Impurities/additives/constituents:

| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes | Specific Conc. Limits |
|-------------------|---|-------|---|------------|-----------------|---|
| Nickel dichloride | CAS No 7718-54-9 EC No 231-743-0 Index No 028-011-00-6 | < 0,1 | Acute Tox. 3 / H301 Acute Tox. 3 / H331 Skin Irrit. 2 / H315 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 Muta. 2 / H341 Carc. 1A / H350i Repr. 1B / H360D STOT RE 1 / H372 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 | | GHS-HC IOELV | Skin Irrit. 2; H315: C ≥ 20 % Skin Sens. 1; H317: C $\geq 0,01$ % STOT RE 1; H372: C ≥ 1 % STOT RE 2; H373: 0,1 % \leq C < 1 % |

Notes

GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)

IOELV: Substance with a community indicative occupational exposure limit value

| Substance, Specific Conc. Limits, M-factors, ATE | | | |
|--|-----------|-----------|----------------|
| Specific Conc. Limits | M-Factors | ATE | Exposure route |
| - | - | 500 mg/kg | oral |

For full text of abbreviations: see SECTION 16

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: **5192**

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off immediately all contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician. In case of skin irritation, consult a physician.

Following eye contact

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.

Following ingestion

Rinse mouth immediately and drink plenty of water. Rinse mouth with water (only if the person is conscious). Call a physician immediately. Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Following inhalation: Irritation,

Following skin contact: Allergic reactions, Corrosion,

After eye contact: Risk of serious damage to eyes, Risk of blindness,

Following ingestion: Vomiting, Gastric perforation

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

In case of fire may be liberated:

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: **5192**

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use extractor hood (laboratory). Avoid dust formation.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5\%$, extra pure, anhydrous

article number: 5192

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [mg/m ³] | STEL [mg/m ³] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|---------------------------|-----------|------------|--------------------------|---------------------------|--------------------------------|----------------|-------------|
| EU | nickel compounds | 7718-54-9 | IOELV | 0,05 | | | i, cmr_Nicomp2 | 2022/431/EU |
| EU | nickel compounds | 7718-54-9 | IOELV | 0,01 | | | r, cmr_Nicomp | 2022/431/EU |
| GB | nickel, soluble compounds | 7718-54-9 | WEL | 0,1 | | | Ni | EH40/2005 |

Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur

cmr_Nicomp The limit value shall apply from 18 January 2025

cmr_Nicomp2 The limit value shall apply from 18 January 2025. Until then a limit value of 0,1 mg/m³ shall apply.

2

i Inhalable fraction

Ni Calculated as Ni (nickel)

r Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|------------------|------------------------------------|-------------------|----------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 2,8 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

| Relevant DNELs of components of the mixture | | | | | | |
|---|-----------|----------|-------------------------|------------------------------------|-------------------|----------------------------|
| Name of substance | CAS No | Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| Nickel dichloride | 7718-54-9 | DNEL | 50 µg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Nickel dichloride | 7718-54-9 | DNEL | 12,8 mg/m ³ | human, inhalatory | worker (industry) | acute - systemic effects |
| Nickel dichloride | 7718-54-9 | DNEL | 50 µg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |
| Nickel dichloride | 7718-54-9 | DNEL | 1,6 mg/m ³ | human, inhalatory | worker (industry) | acute - local effects |
| Nickel dichloride | 7718-54-9 | DNEL | 0,44 µg/cm ² | human, dermal | worker (industry) | chronic - local effects |

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

| Relevant PNECs of components of the mixture | | | | | | |
|---|-----------|-----------|----------------------------|-----------------------|------------------------------|------------------------------|
| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
| Nickel dichloride | 7718-54-9 | PNEC | 7,1 $\mu\text{g}/\text{l}$ | aquatic organisms | freshwater | short-term (single instance) |
| Nickel dichloride | 7718-54-9 | PNEC | 8,6 $\mu\text{g}/\text{l}$ | aquatic organisms | marine water | short-term (single instance) |
| Nickel dichloride | 7718-54-9 | PNEC | 0,33 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Nickel dichloride | 7718-54-9 | PNEC | 109 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Nickel dichloride | 7718-54-9 | PNEC | 109 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Nickel dichloride | 7718-54-9 | PNEC | 29,9 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggles with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



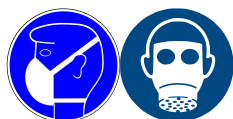
Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state | solid |
| Form | powder, crystalline |
| Colour | dark brown |
| Odour | pungent |
| Melting point/freezing point | 306 °C (ECHA) |
| Boiling point or initial boiling point and boiling range | not determined |
| Flammability | non-combustible |
| Lower and upper explosion limit | not determined |
| Flash point | not applicable |
| Auto-ignition temperature | not determined |
| Decomposition temperature | 480 °C (ECHA) |
| pH (value) | 1 (in aqueous solution: 200 g/l, 20 °C) |
| Kinematic viscosity | not relevant |
| <u>Solubility(ies)</u> | |
| Water solubility | 920 g/l at 20 °C |
| <u>Partition coefficient</u> | |
| Partition coefficient n-octanol/water (log value): | -4 (24 °C) |
| Vapour pressure | 1 hPa at 20 °C |
| <u>Density and/or relative density</u> | |
| Density | 3,65 g/cm ³ (ECHA) |
| Relative vapour density | information on this property is not available |

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

Bulk density 1.000 kg/m³

Particle characteristics No data available.

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard classes:

Corrosive to metals category 1: corrosive to metals

Other safety characteristics: There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

It's a reactive substance. Substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Strong alkali

10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above: 480 °C.

10.5 Incompatible materials

different metals

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

GHS of the United Nations, annex 4. May be harmful in contact with skin.

| Acute toxicity | | | | | |
|----------------|----------|--------------|---------|--------|--------|
| Exposure route | Endpoint | Value | Species | Method | Source |
| oral | LD50 | 500 mg/kg | rat | | ECHA |
| dermal | LD50 | >2.000 mg/kg | rat | | ECHA |

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

Acute toxicity estimate (ATE) of components of the mixture

| Name of substance | CAS No | Exposure route | ATE |
|-------------------|-----------|-----------------------|---------------|
| Nickel dichloride | 7718-54-9 | oral | 200 mg/kg |
| Nickel dichloride | 7718-54-9 | inhalation: dust/mist | 0,593 mg/l/4h |

Acute toxicity of components of the mixture

| Name of substance | CAS No | Exposure route | Endpoint | Value | Species |
|-------------------|-----------|-----------------------|----------|---------------|---------|
| Nickel dichloride | 7718-54-9 | oral | LD50 | 200 mg/kg | rat |
| Nickel dichloride | 7718-54-9 | inhalation: dust/mist | LC50 | 0,593 mg/l/4h | rat |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

vomiting, severe abdominal pain

• If in eyes

Causes serious eye damage, risk of blindness

• If inhaled

cough, pain, choking, and breathing difficulties

• If on skin

causes skin irritation, May produce an allergic reaction, pruritis, localised redness

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

• Other information

none

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

| Aquatic toxicity (acute) of components of the mixture | | | | | |
|---|-----------|----------|------------------------------|-----------------------|---------------|
| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
| Nickel dichloride | 7718-54-9 | LC50 | 15,3 mg/l | fish | 96 h |
| Nickel dichloride | 7718-54-9 | EC50 | 685,8 $\mu\text{g/l}$ | aquatic invertebrates | 48 h |
| Nickel dichloride | 7718-54-9 | ErC50 | ≤ 1.120 $\mu\text{g/l}$ | algae | 72 h |

| Aquatic toxicity (chronic) of components of the mixture | | | | | |
|---|-----------|----------|----------------------------|-----------------------|---------------|
| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
| Nickel dichloride | 7718-54-9 | ErC50 | 8.363 $\mu\text{g/l}$ | fish | 40 d |
| Nickel dichloride | 7718-54-9 | LC50 | 204 $\mu\text{g/l}$ | aquatic invertebrates | 21 d |
| Nickel dichloride | 7718-54-9 | EbC50 | 6,2 $\mu\text{g/l}$ | aquatic invertebrates | 30 d |
| Nickel dichloride | 7718-54-9 | EC50 | ≤ 108 $\mu\text{g/l}$ | aquatic invertebrates | 21 d |

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

| | |
|---------------------------|------------|
| n-octanol/water (log KOW) | -4 (24 °C) |
|---------------------------|------------|

| Bioaccumulative potential of components of the mixture | | | | |
|--|-----------|-----|---------|----------|
| Name of substance | CAS No | BCF | Log KOW | BOD5/COD |
| Nickel dichloride | 7718-54-9 | 86 | | |

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: **5192**

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-----------|---------|
| ADRRID | UN 1773 |
| IMDG-Code | UN 1773 |
| ICAO-TI | UN 1773 |

14.2 UN proper shipping name

| | |
|-----------|----------------------------|
| ADRRID | FERRIC CHLORIDE, ANHYDROUS |
| IMDG-Code | FERRIC CHLORIDE, ANHYDROUS |
| ICAO-TI | Ferric chloride, anhydrous |

14.3 Transport hazard class(es)

| | |
|-----------|---|
| ADRRID | 8 |
| IMDG-Code | 8 |
| ICAO-TI | 8 |

14.4 Packing group

| | |
|--------|-----|
| ADRRID | III |
|--------|-----|

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

IMDG-Code III

ICAO-TI III

14.5 Environmental hazards non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user


Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments


The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) Additional information

| | |
|---|---|
| Proper shipping name | FERRIC CHLORIDE, ANHYDROUS |
| Particulars in the transport document | UN1773, FERRIC CHLORIDE, ANHYDROUS, 8, III, (E) |
| Classification code | C2 |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | 590 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| Transport category (TC) | 3 |
| Tunnel restriction code (TRC) | E |
| Hazard identification No | 80 |
| Emergency Action Code | 2X |

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) Additional information

| | |
|---|-------------|
| Classification code | C2 |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | 590 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| Transport category (TC) | 3 |
| Hazard identification No | 80 |

Safety data sheet Safety data sheet


acc. to Regulation (EC) No. 1907/2006 (REACH)




Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

International Maritime Dangerous Goods Code (IMDG) - Additional information

| | |
|---|--|
| Proper shipping name | FERRIC CHLORIDE, ANHYDROUS |
| Particulars in the shipper's declaration | UN1773, FERRIC CHLORIDE, ANHYDROUS, 8, III |
| Marine pollutant | - |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | - |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| EmS | F-A, S-B |
| Stowage category | A |
| Segregation group | 1 - Acids |

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

| | |
|---|--|
| Proper shipping name | Ferric chloride, anhydrous |
| Particulars in the shipper's declaration | UN1773, Ferric chloride, anhydrous, 8, III |
| Danger label(s) | 8 |
|  | |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant provisions of the European Union (EU)

Seveso Directive

| 2012/18/EU (Seveso III) | | | |
|-------------------------|---------------------------------------|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| | not assigned | | |

Deco-Paint Directive

| | |
|-------------|-----|
| VOC content | 0 % |
|-------------|-----|

Industrial Emissions Directive (IED)

| | |
|-------------|-----|
| VOC content | 0 % |
|-------------|-----|

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

not listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Water Framework Directive (WFD)

| List of pollutants (WFD) | | | | |
|--------------------------|---|-----------|-----------|---------|
| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
| Nickel dichloride | nickel compounds | | b) | |
| Nickel dichloride | nickel compounds | 7440-02-0 | c) | |
| Nickel dichloride | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |
| Nickel dichloride | Metals and their compounds | | a) | |

Legend

- A) Indicative list of the main pollutants
- B) List of priority substances in the field of water policy
- C) Environmental Quality Standards for Priority Substances and certain other pollutants

Regulation on the marketing and use of explosives precursors

not listed

Regulation on drug precursors

not listed

Regulation on substances that deplete the ozone layer (ODS)

not listed

Regulation concerning the export and import of hazardous chemicals (PIC)

not listed

Regulation on persistent organic pollutants (POP)

not listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

not listed

Restrictions according to GB REACH, Annex 17

| Dangerous substances with restrictions (GB REACH, Annex 17) | | | |
|---|------------------------|--------|----|
| Name of substance | Name acc. to inventory | CAS No | No |
| Nickel dichloride | Nickel compounds | | 27 |
| Nickel dichloride | carcinogenic | | 28 |
| Nickel dichloride | toxic for reproduction | | 30 |

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

| Country | Inventory | Status |
|---------|------------|-------------------------------------|
| AU | AIIC | all ingredients are listed |
| CA | DSL | all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | all ingredients are listed |
| EU | REACH Reg. | all ingredients are listed |
| JP | CSCL-ENCS | all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| PH | PICCS | all ingredients are listed |
| TR | CICR | all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed (ACTIVE) |
| VN | NCI | all ingredients are listed |

Legend

| | |
|------------|---|
| AIIC | Australian Inventory of Industrial Chemicals |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| KECI | Korea Existing Chemicals Inventory |
| NCI | National Chemical Inventory |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS) |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|---------------------------|--|-----------------|
| 2.1 | | Classification acc. to GHS: change in the listing (table) | yes |
| 2.2 | Signal word: Warning | Signal word: Danger | yes |

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|---------------------------|---|-----------------|
| 2.2 | | Hazard statements: change in the listing (table) | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------------|--|
| 2022/431/EU | Directive (EU) 2022/431 of the European Parliament and of the Council of 9 March 2022 amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work |
| Acute Tox. | Acute toxicity |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| Aquatic Acute | Hazardous to the aquatic environment - acute hazard |
| Aquatic Chronic | Hazardous to the aquatic environment - chronic hazard |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BOD | Biochemical Oxygen Demand |
| Carc. | Carcinogenicity |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| COD | Chemical oxygen demand |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EbC50 | \equiv EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | \equiv EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride $\geq 98,5$ %, extra pure, anhydrous

article number: 5192

| Abbr. | Descriptions of used abbreviations |
|-------------|---|
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| IOELV | Indicative occupational exposure limit value |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| log KOW | n-Octanol/water |
| Muta. | Germ cell mutagenicity |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| Repr. | Reproductive toxicity |
| Resp. Sens. | Respiratory sensitisation |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| Skin Sens. | Skin sensitisation |
| STEL | Short-term exposure limit |
| STOT RE | Specific target organ toxicity - repeated exposure |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



Iron(III) chloride \geq 98,5 %, extra pure, anhydrous

article number: **5192**

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|-------|--|
| H290 | May be corrosive to metals. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H331 | Toxic if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H341 | Suspected of causing genetic defects. |
| H350i | May cause cancer by inhalation. |
| H360D | May damage the unborn child. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.