

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form : Substance
:
CAS-No. : 7705-08-0
Product code : 03818
Formula : FeCl₃
Chemical structure :



Synonyms : Iron (III) Chloride

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

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

Full text of H statements : see section 16

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Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xn; R22

Xi; R41

Xi; R38

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP] Extra labelling to display Extra classification(s) to display

Hazard pictograms (CLP) :



GHS05

GHS07

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H290 - May be corrosive to metals.

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H318 - Causes serious eye damage.

Precautionary statements (CLP) :

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : FERRIC CHLORIDE ANHYDROUS AR

CAS-No. : 7705-08-0

Full text of R- and H-statements: see section 16

3.2. Mixtures

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. Get medical advice/attention.
- First-aid measures after skin contact : Wash skin with plenty of water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

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

- Symptoms/effects after skin contact : Causes skin irritation.
- Symptoms/effects after eye contact : Causes serious eye damage.
- Symptoms/effects after ingestion : Harmful if swallowed.

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 : Water spray. Foam. Dry powder. Carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : May be corrosive to metals.
- Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe vapours. Provide good ventilation in process area to prevent formation of vapour.

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Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection : Protective gloves
Eye protection : Chemical goggles or safety glasses
Skin and body protection : Wear suitable protective clothing
Respiratory protection : Wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Molecular mass : 162.21 g/mol
Colour : Dark green.
Odour : slight odor of hydrochloric acid.
Odour threshold : No data available
pH : 10.1 at 10 g/l at 20 °C
Relative evaporation rate (butylacetate=1) : No data available
Melting point : -63 °C
Freezing point : No data available
Boiling point : 139 °C
Flash point : 30 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : 8 hPa at 20 °C
Relative vapour density at 20 °C : No data available
Relative density : No data available

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Density	: 0.91 g/cm ³
Solubility	: Water: Soluble in water
Log Pow	: 0.055
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 1.9 - 11.8 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

metals. May be corrosive to metals.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Harmful if swallowed.
Skin corrosion/irritation	: Causes skin irritation. pH: 10.1 at 10 g/l at 20 °C
Serious eye damage/irritation	: Causes serious eye damage. pH: 10.1 at 10 g/l at 20 °C
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

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Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

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Log Pow	0.055
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1773
UN-No. (IMDG) : 1773
UN-No. (IATA) : 1773
UN-No. (ADN) : 1773
UN-No. (RID) : 1773

14.2. UN proper shipping name

Proper Shipping Name (ADR) : FERRIC CHLORIDE, ANHYDROUS
Proper Shipping Name (IMDG) : FERRIC CHLORIDE, ANHYDROUS

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Proper Shipping Name (IATA)	: Ferric chloride, anhydrous
Proper Shipping Name (ADN)	: FERRIC CHLORIDE, ANHYDROUS
Proper Shipping Name (RID)	: FERRIC CHLORIDE, ANHYDROUS
Transport document description (ADR)	: UN 1773 FERRIC CHLORIDE, ANHYDROUS, 8, III, (E)
Transport document description (IMDG)	: UN 1773 FERRIC CHLORIDE, ANHYDROUS, 8, III
Transport document description (IATA)	: UN 1773 Ferric chloride, anhydrous, 8, III
Transport document description (ADN)	: UN 1773 FERRIC CHLORIDE, ANHYDROUS, 8, III
Transport document description (RID)	: UN 1773 FERRIC CHLORIDE, ANHYDROUS, 8, III

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 8
Danger labels (ADR)	: 8



IMDG

Transport hazard class(es) (IMDG)	: 8
Danger labels (IMDG)	: 8



IATA

Transport hazard class(es) (IATA)	: 8
Hazard labels (IATA)	: 8



ADN

Transport hazard class(es) (ADN)	: 8
Danger labels (ADN)	: 8



RID

Transport hazard class(es) (RID)	: 8
Danger labels (RID)	: 8

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14.4. Packing group


Packing group (ADR)	: III
Packing group (IMDG)	: III
Packing group (IATA)	: III
Packing group (ADN)	: III
Packing group (RID)	: III

14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR)	: C2
Special provisions (ADR)	: 590
Limited quantities (ADR)	: 5kg
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P002, IBC08, LP02, R001
Special packing provisions (ADR)	: B3
Mixed packing provisions (ADR)	: MP10
Portable tank and bulk container instructions (ADR)	: T1
Portable tank and bulk container special provisions (ADR)	: TP33
Tank code (ADR)	: SGAV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Bulk (ADR)	: VC1, VC2, AP7
Hazard identification number (Kemler No.)	: 80
Orange plates	: 
Tunnel restriction code (ADR)	: E
EAC code	: 2X

- Transport by sea

Packing instructions (IMDG)	: P002, LP02
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: T1
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: Brown solid. In the presence of moisture, highly corrosive to most metals. The provisions of this Code should not apply to the solid hydrated form.

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MFAG-No : 157

- Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y845
PCA limited quantity max net quantity (IATA) : 5kg
PCA packing instructions (IATA) : 860
PCA max net quantity (IATA) : 25kg
CAO packing instructions (IATA) : 864
CAO max net quantity (IATA) : 100kg
Special provisions (IATA) : A803
ERG code (IATA) : 8L

- Inland waterway transport

Classification code (ADN) : C2
Special provisions (ADN) : 590
Limited quantities (ADN) : 5 kg
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

- Rail transport

Classification code (RID) : C2
Special provisions (RID) : 590
Excepted quantities (RID) : E1
Packing instructions (RID) : P002, IBC08, LP02, R001
Special packing provisions (RID) : B3
Mixed packing provisions (RID) : MP10
Portable tank and bulk container instructions (RID) : T1
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAV
Transport category (RID) : 3
Special provisions for carriage – Bulk (RID) : VC1, VC2, AP7
Colis express (express parcels) (RID) : CE11
Hazard identification number (RID) : 80

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

FERRIC CHLORIDE ANHYDROUS AR is not on the REACH Candidate List

FERRIC CHLORIDE ANHYDROUS AR is not on the REACH Annex XIV List

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15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV; ID No. 515)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Class for fire hazard : Class II-1

Store unit : 5 liter

Classification remarks : R10 <H290;H302;H315;H318>; Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Met. Corr. 1	Corrosive to metals, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
R22	Harmful if swallowed
R38	Irritating to skin
R41	Risk of serious damage to eyes
Xi	Irritant
Xn	Harmful

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.