

Safety Data Sheet

FERRIC CHLORIDRE IN SOLUTION

Safety Data Sheet dated 04/01/2024 version 01



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

1.1. Product identifier

Trade name: FERRIC CHLORIDRE IN SOLUTION

UFI: 7E00-FOXU-W00S-YEFJ

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

Recommended use: FOR INDUSTRIAL USE

FOR PROFESSIONAL USE

Uses advised against: N.A.

1.3. Details of the supplier of the safety data sheet

Company:

ALTAIR CHEMICAL S.r.l.

Via Moie Vecchie 13

56048 Saline di Volterra (PI)

Competent person responsible for the safety data sheet: sds@altairchemical.com

1.4. Emergency telephone number

ALTAIR CHEMICAL S.r.l. Phone n. +39-0588-9811

Malta: 112

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Acute Tox. 4	Harmful if swallowed.
Skin Irrit. 2	Causes skin irritation.
Eye Dam. 1	Causes serious eye damage.
Skin Sens. 1	May cause an allergic skin reaction.
Met. Corr. 1	May be corrosive to metals.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Pictograms and Signal Words



Danger

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

P280	Wear protective gloves and eye/face protection.
P301+P312	IF SWALLOWED: Call a doctor if you feel unwell.
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 doctor.
P501	Dispose of contents/container in accordance with applicable regulations.

Contains

IRON(III) CHLORIDE

Special provisions according to Annex XVII of REACH and subsequent amendments:

None.

2.3. Other hazardsNo PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

Other Hazards: No other hazards

SECTION 3: Composition/information on ingredients**3.1. Substances**

N.A.

3.2. Mixtures

Mixture identification: FERRIC CHLORIDRE IN SOLUTION

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Numb.	Classification	Registration Number
≥ 38 - ≤ 41 %	IRON(III) CHLORIDE	CAS:7705-08-0 EC:231-729-4	Met. Corr. 1, H290; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Dam. 1, H318; Skin Sens. 1, H317	01-2119497998-05-0033

SECTION 4: First aid measures**4.1. Description of first aid measures**

In case of skin contact:

- Immediately take off all contaminated clothing.
- After contact with skin, wash immediately with soap and plenty of water.
- Wash immediately with water.
- In case of persistent skin irritation consult a doctor.

In case of eyes contact:

- After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
- Protect uninjured eye.
- OBTAIN IMMEDIATE MEDICAL ATTENTION.
- If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist.

In case of Ingestion:

- Do not induce vomiting, get medical attention showing the SDS and hazard labelling.
- OBTAIN IMMEDIATE MEDICAL ATTENTION.
- Give nothing to eat or drink.

In case of Inhalation:

- Remove casualty to fresh air and keep warm and at rest.

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

- Eye irritation
- Eye damages
- Skin Irritation
- Erythema

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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

Suitable extinguishing media:

- Foam, extinguishing powder, sprinkling water jet, carbon dioxide.
- According to the materials involved in the fire.

Extinguishing media which must not be used for safety reasons:

- None in particular.

5.2. Special hazards arising from the substance or mixture

- Hazardous combustion products:
- Hydrogen chloride

5.3. Advice for firefighters

- Wear suitable protective clothing (helmet, protective clothings, goggles, fire resistant gloves, boots) and protect respiratory organs

(self contained breathing apparatus).
Use suitable breathing apparatus .
Cool the containers exposed to the fire with water.
Move undamaged containers from immediate hazard area if it can be done safely.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Remove persons to safety.
See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Suitable material for taking up: absorbing material, organic, sand
After the product has been recovered, rinse the area and materials involved with water.
Dispose of the collected material in accordance with the current regulations.
Retain contaminated washing water and dispose it.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:

See subsection 10.5

Instructions as regards storage premises:

Adequately ventilated premises.

Packaging materials:

Keep containers tightly closed and properly labelled.

7.3. Specific end use(s)

Recommendation(s)

None in particular

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Derived No Effect Level (DNEL) values

	Worker Industry	Worker Professional	Consumer	Exposure Route	Exposure Frequency	Remark
IRON(III) CHLORIDE CAS: 7705-08-0	2.8 mg/kg		1.4 mg/kg bw/d	Human Dermal	Long Term,	systemic effects
			0.28 mg/kg bw/d	Human Oral	Long Term,	systemic effects
			20 mg/kg bw/d	Human Oral	Short Term,	systemic effects

8.2. Exposure controls

Individual protection measures:

Personal protective equipment selections vary based on potential exposure conditions and working conditions.

The final choice of protective equipment will depend upon a risk assessment.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Please see both sections 5 and 6 for information about personal protective equipment to be worn in an emergency (e.g.: fire or unintentional release of the substance).

Eye protection:

Chemical risk goggles (with side protection).

Technical reference standard: UNI EN 166

Protection for skin:

Chemical protection clothing.

Technical reference standard: UNI EN 13034

Wear chemical resistant safety shoes.

Technical reference standard: UNI EN 20345

Protection for hands:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Glove suitability and breakthrough time will differ depending on the specific use conditions.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Wear suitable gloves tested to EN374.

Suitable material:

CR (polychloroprene, chloroprene rubber).

NBR (nitrile rubber).

Respiratory protection:

Depending on the potential for exposure, select respiratory protective equipment suitable for the specific conditions of use and in compliance with current legislation.

Gas filtering device (DIN EN 141).

Thermal Hazards:

N.A.

Environmental exposure controls:

Comply with the applicable environmental regulations limiting discharge to air, water and soil.

Hygienic and Technical measures

N.A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Color: Brown

Odour: Pungent

Odour threshold: (Data not available.)

pH: 1.0-1.4

Kinematic viscosity: N.A. (Data not available.) (Data not available.)

Melting point / freezing point: -12°C

Initial boiling point and boiling range: 106-120 °C

Flash point: Not Relevant (Study scientifically not necessary)

Upper/lower flammability or explosive limits: Not Relevant

Vapour density: N.A.

Vapour pressure: 17 hPa (20°C)

Relative density: 1.4175 g/cm³

Solubility in water: 100%

Solubility in oil: N.A.

Partition coefficient (n-octanol/water): Not Relevant (Does not apply to inorganic products.)

Auto-ignition temperature: Not Relevant

Decomposition temperature: N.A. (Data not available.)

Flammability: Non-flammable

Volatile Organic compounds - VOCs = N.A.

Particle characteristics:

Particle size: Not Relevant (Does not apply to liquid.)

9.2. Other information

Miscibility: N.A.

Conductivity: N.A.

Explosive properties: No (There are no chemical groups present in the molecule which are associated with these properties)

Oxidizing properties: No (There are no chemical groups present in the molecule which are associated with these properties)

Evaporation rate: N.A.
No other relevant information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

It corrodes quickly most of the metals (titanium is an exception), can generate flammable, potentially explosive hydrogen gas.

10.4. Conditions to avoid

Stable under normal conditions.

Avoid contact with strong oxidizing agent, nylon, aluminum / aluminum alloys, carbon steel, stainless steel, copper and / copper alloys.

10.5. Incompatible materials

Keep away from strong bases, incompatible with oxidants and metals.

10.6. Hazardous decomposition products

When heated to decomposition, it emits toxic hydrogen chloride or chlorine.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological Information of the Preparation

a) acute toxicity	The product is classified: Acute Tox. 4(H302)
b) skin corrosion/irritation	The product is classified: Skin Irrit. 2(H315)
c) serious eye damage/irritation	The product is classified: Eye Dam. 1(H318)
d) respiratory or skin sensitisation	The product is classified: Skin Sens. 1(H317)
e) germ cell mutagenicity	Not classified
	Based on available data, the classification criteria are not met
f) carcinogenicity	Not classified
	Based on available data, the classification criteria are not met
g) reproductive toxicity	Not classified
	Based on available data, the classification criteria are not met
h) STOT-single exposure	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

IRON(III) CHLORIDE	a) acute toxicity	LD50 Oral Rat = 500 mg/kg	OECD TG 423
		LD50 Skin Rat > 2000 mg/kg bw	OECD TG 402
		LC50 Inhalation Rat 1100 mg/m ³ - Based on available data, the classification criteria are not met	
b) skin corrosion/irritation	Skin Irritant Rabbit Positive	OECD 404	
	Eye Corrosive Rabbit Positive	OECD TG 405	
d) respiratory or skin sensitisation	Skin Sensitization Positive		
i) STOT-repeated exposure	No Observed Adverse Effect Level Oral Rat 277 mg/kg 14 weeks	OECD TG 408	

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration \geq 0.1%

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Eco-Toxicological Information:

List of Eco-Toxicological properties of the product

Not classified for environmental hazards.

No data available for the product

List of Eco-Toxicological properties of the components

Component	Ident. Numb.	Ecotox Data
IRON(III) CHLORIDE	CAS: 7705-08-0 - EINECS: 231-729-4	a) Aquatic acute toxicity : LC50 Fish Lepomis macrochirus 20.3 mg Fe/l 96h a) Aquatic acute toxicity : LC50 aquatic invertebrates Daphnia pulex 12.9 mg Fe/l 48h

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

No PBT, vPvB or endocrine disruptor substances present in concentration $\geq 0.1\%$

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration $\geq 0.1\%$

12.7. Other adverse effects

N.A.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number or ID number

2582

14.2. UN proper shipping name

ADR-Shipping Name: FERRIC CHLORIDE SOLUTION

IATA-Technical name: FERRIC CHLORIDE SOLUTION

IMDG-Technical name: FERRIC CHLORIDE SOLUTION

14.3. Transport hazard class(es)

ADR-Class: 8

IATA-Class: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group: III

IATA-Packing group: III

IMDG-Packing group: III

14.5. Environmental hazards

Marine pollutant: No

Environmental Pollutant: No

IMDG-EMS: F-A, S-B

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR-Label: 8

ADR - Hazard identification number: 80

ADR-Special Provisions: -

ADR-Transport category (Tunnel restriction code): 3 (E)

Air (IATA):

IATA-Passenger Aircraft: 852

IATA-Cargo Aircraft: 856

IATA-Label: 8

IATA-Subsidiary hazards: -

IATA-Erg: 8L

IATA-Special Provisions: A3 A803

Sea (IMDG):

IMDG-Stowage Code: Category A

IMDG-Stowage Note: SGG1 SG36 SG49

IMDG-Subsidiary hazards: -

IMDG-Special Provisions: 223

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Regulation (EU) n. 2020/878

Regulation (EC) n. 1907/2006 (REACH) and subsequent amendments

Regulation (EC) n. 1272/2008 (CLP) and subsequent amendments

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product: 3

Restrictions related to the substances contained: None.

Provisions related to directive EU 2012/18 (Seveso III):

N.A.

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

Where applicable, refer to the following regulatory provisions :

German Water Hazard Class.

Class 1: slightly hazardous for water.

SVHC Substances:

No data available

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

Substances for which a Chemical Safety Assessment has been carried out:

IRON(III) CHLORIDE

SECTION 16: Other information

Code	Description
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.

Code	Hazard class and hazard category	Description
2.16/1	Met. Corr. 1	Substance or mixture corrosive to metals, Category 1
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/2	Skin Irrit. 2	Skin irritation, Category 2
3.3/1	Eye Dam. 1	Serious eye damage, Category 1

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
3.1 /4/Oral	Calculation method
3.2 /2	Calculation method
3.3 /1	Calculation method
3.4.2/1	Calculation method
2.16/1	On basis of test data

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

AND: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BCF: Biological Concentration Factor

BEI: Biological Exposure Index

BOD: Biochemical Oxygen Demand

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COD: Chemical Oxygen Demand

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DMEL: Derived Minimal Effect Level

DNEL: Derived No Effect Level.

DPD: Dangerous Preparations Directive

DSD: Dangerous Substances Directive

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

IC50: half maximal inhibitory concentration

ICAO: International Civil Aviation Organization.

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).

IMDG: International Maritime Code for Dangerous Goods.

INCI: International Nomenclature of Cosmetic Ingredients.

IRCCS: Scientific Institute for Research, Hospitalization and Health Care

KAFH: KAFH

KSt: Explosion coefficient.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LDLo: Leathal Dose Low

N.A.: Not Applicable

N/D: Not defined/ Not available

NIOSH: National Institute for Occupational Safety and Health

NOAEL: No Observed Adverse Effect Level

OSHA: Occupational Safety and Health Administration.

PBT: Persistent, Bioaccumulative and Toxic

PGK: Packaging Instruction

PNEC: Predicted No Effect Concentration.

PSG: Passengers

RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.

STEL: Short Term Exposure limit.

STOT: Specific Target Organ Toxicity.

TLV: Threshold Limiting Value.

TWATLV: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).

vPvB: Very Persistent, Very Bioaccumulative.

WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

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