



Safety Data Sheet dated 16/6/2020, version 11

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

- 1.1. Product identifier
Trade name: FERRIC CHLORIDRE IN SOLUTION
- 1.2. Relevant identified uses of the substance or mixture and uses advised against
Recommended use:
FOR INDUSTRIAL USE
FOR PROFESSIONAL USE
- 1.3. Details of the supplier of the safety data sheet
Company:
ALTAIR CHIMICA S.p.a.
Via Moie Vecchie 13
56048 Saline di Volterra (PI)
Competent person responsible for the safety data sheet: sds@altairchimica.com
- 1.4. Emergency telephone number
ALTAIR CHIMICA S.p.a. Phone n. +39-0588-9811

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture
EC regulation criteria 1272/2008 (CLP)
- ⚠ Warning, Met. Corr. 1, May be corrosive to metals.
 - ⚠ Warning, Acute Tox. 4, Harmful if swallowed.
 - ⚠ Warning, Skin Sens. 1, May cause an allergic skin reaction.
 - ⚠ Warning, Skin Irrit. 2, Causes skin irritation.
 - ⚠ Danger, Eye Dam. 1, Causes serious eye damage.

Adverse physicochemical, human health and environmental effects:
No other hazards

- 2.2. Label elements
Hazard pictograms:



Danger

Hazard statements:

- H290 May be corrosive to metals.
- H302 Harmful if swallowed.
- H317 May cause an allergic skin reaction.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.

Precautionary statements:

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

Special Provisions:

None

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

None

- 2.3. Other hazards



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FERRIC CHLORIDRE IN SOLUTION

vPvB Substances: None - PBT Substances: None
Other Hazards:
No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

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

Qty	Name	Ident. Number	Classification
>= 30% - < 40%	IRON(III) CHLORIDE	CAS: 7705-08-0 EC: 231-729-4 REACH No.: 01- 2119497998 -05-0033	⚠ 2.16/1 Met. Corr. 1 H290 ⚠ 3.4.2/1 Skin Sens. 1 H317 ⚠ 3.1/4/Oral Acute Tox. 4 H302 ⚠ 3.2/2 Skin Irrit. 2 H315 ⚠ 3.3/1 Eye Dam. 1 H318

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

OBTAIN IMMEDIATE MEDICAL ATTENTION.

After contact with skin, wash immediately with soap and plenty of water.

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.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

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

None

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).

Treatment:

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

5.3. Advice for firefighters

Use suitable breathing apparatus .
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.

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.
 - Retain contaminated washing water and dispose it.
 - In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
 - Suitable material for taking up: absorbing material, organic, sand
- 6.3. Methods and material for containment and cleaning up
 - After the product has been recovered, rinse the area and materials involved with water.
 - Wash with plenty of water.
- 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.
 - See also section 8 for recommended protective equipment.
 - Advice on general occupational hygiene:
 - Contaminated clothing should be changed before entering eating areas.
 - Do not eat or drink while working.
- 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.
- 7.3. Specific end use(s)
 - None in particular

SECTION 8: Exposure controls/personal protection

- 8.1. Control parameters
 - No occupational exposure limit available

DNEL Exposure Limit Values

IRON(III) CHLORIDE - CAS: 7705-08-0

Worker Industry: 2.8 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 1.4 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 0.28 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Consumer: 20 mg/kg - Exposure: Human Oral - Frequency: Short Term (acute)

PNEC Exposure Limit Values

N.A.

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:

Eye glasses with side protection.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

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.

Use protective gloves that provides comprehensive protection.

Suitable gloves type:

UNI EN 420/UNI EN 374

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:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance and colour:	Liquid
Odour:	Pungent
Odour threshold:	N.A.
pH:	1.0-1.4
Melting point / freezing point:	-12°C
Initial boiling point and boiling range:	106°C-120°C
Solid/gas flammability:	N.A.
Upper/lower flammability or explosive limits:	N.A.
Vapour density:	N.A.
Flash point:	N.A.
Evaporation rate:	N.A.
Vapour pressure:	17 hPa (20°C)
Relative density:	1.4175 g/cm ³
Solubility in water:	100%
Solubility in oil:	N.A.
Partition coefficient (n-octanol/water):	N.A.
Auto-ignition temperature:	N.A.

Decomposition temperature:	N.A.
Viscosity:	N.A.
Explosive properties:	N.A.
Oxidizing properties:	N.A.
9.2. Other information	
Miscibility:	N.A.
Fat Solubility:	N.A.
Conductivity:	N.A.
Substance Groups relevant properties	N.A.

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.
None in particular.
- 10.6. Hazardous decomposition products
When heated to decomposition, it emits toxic hydrogen chloride or chlorine.

SECTION 11: Toxicological information

- 11.1. Information on toxicological effects
Toxicological information of the product:
FERRIC CHLORIDRE IN SOLUTION
 - 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 of the main substances found in the product:

IRON(III) CHLORIDE - CAS: 7705-08-0

a) acute toxicity:

Test: LD50 - Route: Skin - Species: Rat = 500 mg/kg

b) skin corrosion/irritation:

Test: Skin Irritant Positive

Test: Eye Corrosive Positive

d) respiratory or skin sensitisation:

Test: Skin Sensitization Positive

SECTION 12: Ecological information

12.1. Toxicity

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

FERRIC CHLORIDRE IN SOLUTION

Not classified for environmental hazards

Based on available data, the classification criteria are not met

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

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

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

ADR-UN Number: 2582

IATA-UN Number: 2582

IMDG-UN Number: 2582

14.2. UN proper shipping name

ADR-Shipping Name: FERRIC CHLORIDE SOLUTION

IATA-Shipping Name: FERRIC CHLORIDE SOLUTION

IMDG-Shipping Name: FERRIC CHLORIDE SOLUTION

14.3. Transport hazard class(es)

ADR-Class: 8

ADR - Hazard identification number: 80

IATA-Class: 8

IATA-Label: 8

IMDG-Class: 8

14.4. Packing group

ADR-Packing Group:	III
IATA-Packing group:	III
IMDG-Packing group:	III
14.5. Environmental hazards	
ADR-Environmental Pollutant:	No
IMDG-Marine pollutant:	No
14.6. Special precautions for user	
ADR-Subsidiary hazards:	-
ADR-S.P.:	-
ADR-Transport category (Tunnel restriction code):	(E)
IATA-Passenger Aircraft:	852
IATA-Subsidiary hazards:	-
IATA-Cargo Aircraft:	856
IATA-S.P.:	A3 A803
IATA-ERG:	8L
IMDG-EmS:	F-A , S-B
IMDG-Subsidiary hazards:	-
IMDG-Stowage and handling:	Category A
IMDG-Segregation:	-
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code	
N.A.	

SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
- Dir. 98/24/EC (Risks related to chemical agents at work)
 - Dir. 2000/39/EC (Occupational exposure limit values)
 - Regulation (EC) n. 1907/2006 (REACH)
 - Regulation (EC) n. 1272/2008 (CLP)
 - Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
 - Regulation (EU) 2015/830
 - Regulation (EU) n. 286/2011 (ATP 2 CLP)
 - Regulation (EU) n. 618/2012 (ATP 3 CLP)
 - Regulation (EU) n. 487/2013 (ATP 4 CLP)
 - Regulation (EU) n. 944/2013 (ATP 5 CLP)
 - Regulation (EU) n. 605/2014 (ATP 6 CLP)
 - Regulation (EU) n. 2015/1221 (ATP 7 CLP)
 - Regulation (EU) n. 2016/918 (ATP 8 CLP)
 - Regulation (EU) n. 2016/1179 (ATP 9 CLP)
 - Regulation (EU) n. 2017/776 (ATP 10 CLP)
 - Regulation (EU) n. 2018/669 (ATP 11 CLP)
 - Regulation (EU) n. 2018/1480 (ATP 13 CLP)
- 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:
 - Restriction 3
 - Restrictions related to the substances contained:
 - No restriction.
- Where applicable, refer to the following regulatory provisions :
- Directive 2012/18/EU (Seveso III)
 - Regulation (EC) nr 648/2004 (detergents).
 - 1999/13/EC (VOC directive)
 - Dir. 2004/42/EC (VOC directive)
- Provisions related to directive EU 2012/18 (Seveso III):
- N.A.
- 15.2. Chemical safety assessment
- A 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

Full text of phrases referred to in Section 3:
H290 May be corrosive to metals.
H317 May cause an allergic skin reaction.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Hazard class and hazard category	Code	Description
Met. Corr. 1	2.16/1	Substance or mixture corrosive to metals, Category 1
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1

Paragraphs modified from the previous revision:

SECTION 1: Identification of the substance/mixture and of the company/undertaking
SECTION 3: Composition/information on ingredients
SECTION 5: Firefighting measures
SECTION 7: Handling and storage
SECTION 8: Exposure controls/personal protection
SECTION 10: Stability and reactivity
SECTION 14: Transport information
SECTION 15: Regulatory information
SECTION 16: Other information

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
Met. Corr. 1, H290	On basis of test data
Acute Tox. 4, H302	Calculation method
Skin Sens. 1, H317	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	On basis of test data (pH)

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,



Safety Data Sheet

FERRIC CHLORIDRE IN SOLUTION

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.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
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.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
N.A.:	Not Available
PNEC:	Predicted No Effect Concentration.
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.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.