

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Identifier:

Product Name: Ferrous Chloride Solution

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

Application of the substance/preparation: At this time we do not have information on identified uses. They will be included in this safety data sheet when available.

Uses advised against: Not identified as yet.

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008:

Hazard class	Hazard category	Target Organs	Hazard statements
Corrosive to metals	Category 1	--	H290 Acute toxicity (Oral)
	Category 4	--	H302
Serious eye damage	Category 1	--	H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC:

Hazard symbol / Category of danger	Risk phrases
Harmful (Xn)	R22 Irritant (Xi)
Harmful (Xn)	R41 Irritant (Xi)

For the full text of the H-Statements mentioned in this Section, see Section 16.

Most important adverse effects:

Human Health: See section 11 for toxicological information.

Physical and chemical hazards: See section 9 for physicochemical information.

Potential environmental effects: See section 12 for environmental information.

SAFETY DATA SHEET

Ferrous Chloride Solution

Issued: 20/10/2015

Page 2

Label elements:

Labelling according to Regulation (EC) No 1272/2008:

Hazard pictograms:



Signal word:

Danger

Hazard statements:

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H318 Causes serious eye damage.

Precautionary statements:

Prevention:

P234 Keep only in original container.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician 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 POISON CENTER or Doctor/ physician. P390 Absorb spillage to prevent material damage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labelling:

EUH208 May produce an allergic reaction.

Hazardous components which must be listed on the label:

Iron Dichloride

Iron Trichloride

Other hazards:

Results of PBT and vPvB assessment: For Results of PBT and vPvB assessment see section 12.5.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixtures:

Hazardous Components:

Iron dichloride:

CAS No.: 7758-94-3

EC No.: 231-843-4

Amount: >=20 - <50

Classification Reg. (EC). No. 1272/2008

Classification (67/548/EEC): Acute Tox. 4 H302. Eye Dam. 1 H318. Met. Corr.1 H290 Harmful: Xn; R22. Irritant: Xi; R41.

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SAFETY DATA SHEET

Ferrous Chloride Solution

Issued: 20/10/2015

Page 3

Iron Trichloride:

CAS No.: 7705-08-0

EC No.: 231-729-4

REACH Registration No.: 01-2119497998-05-XXXX

Amount: ≥ 1 - < 5

Classification Reg. (EC). No. 1272/2008

Classification (67/548/EEC): Acute Tox 4 H302. Skin Irrit.2 H315. Eye Dam.1 H318. Met.Corr.1 H290 Harmful: Xn; R22. Irritant: Xi; R38. Irritant: Xi; R41

Hydrochloric acid:

Index No.: 017-002-01-X

CAS No.: 7647-01-0

EC No.: 231-595-7

Amount: ≥ 1 - < 5

REACH Registration No.: 01-2119484862-27-XXXX

Classification Reg. (EC). No. 1272/2008

Classification (67/548/EEC): Met.Corr.1 H290. STOT SE3 H335. Skin Corr.1B H314 Corrosive; C; R34. Irritant; Xi; R37.

Nickel dichloride:

Index No.: 028-011-00-6

CAS No.: 7718-54-9

EC No.: 231-743-0

Amount: < 0.01

REACH Registration No.: 01-2119486973-20-XXXX

Classification Reg. (EC). No. 1272/2008

Classification (67/548/EEC): Carc.1A H350i. Muta.2 H341. Repr.1B. H360D. Acute Tox.3 H331. Acute Tox.3 H301. STOT RE1 H372. Skin Irrit.2 H315. Resp. Sens.1 H334. Skin Sens.1 H317. Aquatic Acute 1 H400. Aquatic Chronic 1 H410 Dangerous for the environment; N; R50-53, R42/43. Irritant; Xi; R38. Toxic; T; R23/25, R48/23. Repr.Cat.2; R61. Mut.Cat.3; R68. Carc.Cat.1; R49.

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Description of first aid measures:

General: Take off all contaminated clothing immediately

Inhalation: Remove to fresh air. If symptoms call a physician. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position.

Skin contact: Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.

Ingestion: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

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SAFETY DATA SHEET

Ferrous Chloride Solution

Issued: 20/10/2015

Page 4

Most important symptoms and effects, both acute and delayed:

Symptoms: See Section 11 for more detailed information on health effects and symptoms.

Effects: See Section 11 for more detailed information on health effects and symptoms.

Indication of any immediate medical attention and special treatment needed:

Treatment: Treat symptomatically.

No further information available.

5. FIRE-FIGHTING MEASURES

Extinguishing Media:

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: High volume water jet.

Special hazards arising from the substance or mixture:

Advice for fire-fighters: Incomplete combustion may form toxic pyrolysis products.

Specific hazards during fire-fighting: In the event of fire, wear self-contained breathing apparatus. Wear personal protective equipment.

Further information: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Incomplete combustion may form toxic pyrolysis products.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid contact with skin and eyes. Do not breathe vapours or spray mist. For personal protection see section 8.

Environmental precautions: Do not flush into surface water or sanitary sewer system

Methods and material for containment and cleaning up: Use mechanical handling equipment. Keep in suitable, closed containers for disposal. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Keep in suitable, closed containers for disposal.

Further information: Treat recovered material as described in the section "Disposal considerations".

Reference to other sections: For personal protection see section 8.

7. HANDLING AND STORAGE

Precautions for safe handling:

Advice on safe handling: Keep container tightly closed. Avoid formation of aerosol. Do not breathe vapours or spray mist. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

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SAFETY DATA SHEET

Ferrous Chloride Solution

Issued: 20/10/2015

Page 5

Hygiene measures: Keep away from food, drink and animal feeding stuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately. Provide adequate ventilation. Avoid contact with the skin and the eyes.

Information about protection against explosions and fires: No further information

Conditions for safe storage, including any incompatibilities:

Storage:

Requirements to be met by storerooms and containers: Keep only in the original container.

Information about storage in one common storage facility: Normal measures for preventive fire protection.

Further information about storage conditions: Keep tightly closed in a dry and cool place. Keep away from heat.

Advice on common storage: Keep away from food, drink and animal feeding stuffs.

Specific end use(s): No further relevant information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Component: Iron dichloride

EH40 WEL, Time Weighted Average (TWA): as Fe 1 mg/m³

EH40 WEL, Short Term Exposure Limit (STEL): as Fe 2 mg/m³

ELV (IE), Short Term Exposure Limit (STEL): as Fe 2 mg/m³

ELV (IE), Time Weighted Average (TWA): as Fe 1 mg/m³

Component: Iron Trichloride

EH40 WEL, Time Weighted Average (TWA):, as Fe 1 mg/m³

EH40 WEL, Short Term Exposure Limit (STEL):, as Fe 2 mg/m³

ELV (IE), Short Term Exposure Limit (STEL):, as Fe 2 mg/m³

ELV (IE), Time Weighted Average (TWA):, as Fe 1 mg/m³

Component: Hydrochloric acid

EU ELV, Short Term Exposure Limit (STEL): 10 ppm, 15 mg/m³ Indicative

EU ELV, Time Weighted Average (TWA): 5 ppm, 8 mg/m³ Indicative

EH40 WEL, Time Weighted Average (TWA):, Gas and aerosol mists. 1 ppm, 2 mg/m³

EH40 WEL, Short Term Exposure Limit (STEL):, Gas and aerosol mists. 5 ppm, 8 mg/m³

ELV (IE), Time Weighted Average (TWA): 5 ppm, 8 mg/m³ Indicative OELV

ELV (IE), Short Term Exposure Limit (STEL): 10 ppm, 15 mg/m³ Indicative OELV

Exposure controls:

Appropriate engineering controls: Refer to protective measures listed in sections 7 and 8.

Respiratory protection:

Advice: Required, if exposure limit is exceeded (e.g. OEL).

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SAFETY DATA SHEET

Ferrous Chloride Solution

Issued: 20/10/2015

Page 6

Hand protection:

Advice: The glove material has to be impermeable and resistant to the product / the substance / the preparation. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Protective gloves should be replaced at first signs of wear. The following materials are suitable: PVC

Eye Protection:

Advice: Safety goggles

Skin and body protection:

Advice: Wear personal protective equipment

Environmental exposure controls:

General advice: Do not flush into surface water or sanitary sewer system.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties	
Form:	Liquid
Colour:	Green
Odour:	Characteristic
Odour Threshold:	No data available
pH value (10 g/l) at 20°C:	No data available
Melting Point/Range:	Forms crystals <-5°C
Boiling Point/Range:	105°C
Flash Point:	No data available
Evaporation Rate:	No data available
Flammability (solid, gas):	No data available
Upper Explosion Limit:	No data available
Lower Explosion Limit:	No data available
Vapour Pressure:	No data available
Relative Vapour Density:	No data available
Relative Density:	1.2 – 1.4 (20°C)
Partition Coefficient n-octanol/water:	Completely miscible
Auto-ignition Temperature:	No data available
Thermal Decomposition:	No data available
Viscosity, Dynamic:	No data available
Explosivity:	No data available
Oxidising Properties:	No data available
Other Information:	No further relevant information

[cont...]

10. STABILITY AND REACTIVITY

Reactivity: No information available.

Stability: Stable.

Possibility of hazardous reactions:

Hazardous reactions: Hazardous polymerisation does not occur.

Conditions to avoid: Avoid high temperatures.

Incompatible materials:

Materials to avoid: Acids, alkalis, Copper, Hydrogen peroxide, Hypochlorites, Iron, Stainless steel, Metals, Strong oxidizing agents.

Hazardous decomposition products: Thermal decomposition causes the release of: Toxic gases, hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects Oral: LD50 984 mg/kg (rat)

Inhalation: Irritating to respiratory system. Material is irritating to mucous membranes and upper respiratory tract.

Dermal: No data available

Primary irritant effect:

Skin:

Result: Irritating to skin. Yellow staining of skin

Eye:

Result: Irritating to eyes.

Sensitisation:

Result: No sensitizing effect known.

CMR Effects

Carcinogenicity: No data available

Mutagenicity: No data available

Reproductive toxicity: No data available

Specific Target Organ Toxicity

Single Exposure: No data available

Repeated Exposure: No data available

Additional toxicological information:

Repeated Dose Toxicity: No data available

Aspiration Hazard: No data available

12. ECOLOGICAL INFORMATION**Toxicity:****Acute Toxicity:****Fish:** LC50: 6.8 mg/l (Onchorhynchus mykiss (rainbow trout))**Algae:** Toxic to algae.**Persistence and degradability****Biodegradability:** Slowly biodegradable**Bioaccumulation potential:** Completely soluble**Mobility in soil:** No further relevant information available**Results of PBT and vPvB assessment PBT:** No further relevant information available.**vPvB:** No further relevant information available.**Other adverse effects:** No further relevant information available**Additional ecological information:** Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.**13. DISPOSAL CONSIDERATIONS****Waste treatment methods Product:** Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.**Uncleaned packaging:** Empty contaminated packaging's thoroughly. They can be recycled after thorough and proper cleaning. Packaging's that cannot be cleaned are to be disposed of in the same manner as the product.**European waste catalogue number:** No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.**14. TRANSPORT INFORMATION****UN Number:** 1760**UN Proper Shipping Name ADR/RID/IMDG:** CORROSIVE LIQUID, N.O.S. (Iron dichloride)**Transport Hazard Class (es):****ADR-Class:** 8**(Labels; Classification Code; Hazard identification No;****Tunnel restriction code):** 8; C9; 80; (E)**RID-Class:** 8**(Labels; Classification Code; Hazard identification No):** 8; C9; 80**IMDG-Class:** 8**(Labels; EmS):** 8; F-A, S-B

Packaging Group ADR/RID/IMDG: III

Environmental Hazards:

Labelling according to 5.2.1.8 ADR: No

Labelling according to 5.2.1.8 RID: No

Labelling according to 5.2.1.6.3 IMDG: No

Classification as environmentally hazardous according to 2.9.3 IMDG: No

Special Precautions for Users: Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code IMDG: Not applicable.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture: No data available.

Chemical Safety Assessment: No data available.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Full text of R Phrases referred to under Section 2 and 3:

R22 Harmful if swallowed.
R23/25 Also toxic by inhalation and if swallowed.
R34 Causes burns.
R37 Irritating to respiratory system.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R42/43 May cause sensitisation by inhalation and skin contact.
R48/23 Also toxic: danger of serious damage to health by prolonged exposure through inhalation. R49 May cause cancer by inhalation.
R50 Very toxic to aquatic organisms.
R53 May cause long-term adverse effects in the aquatic environment.
R61 May cause harm to the unborn child.
R68 Also possible risk of irreversible effects.

Full text of H-Statements referred to under sections 2 and 3:

H290 May be corrosive to metals.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.

SAFETY DATA SHEET
Ferrous Chloride Solution

Issued: 20/10/2015

Page 10

Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.