



Chemifloc Ltd.

SAFETY DATA SHEET Ferric Chloride Solution

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II

Section 1: Identification of the substance and of the company/undertaking

Identification of the substance or mixture

Product Name:	Ferric Chloride Solution
Chemical Name:	Iron (III) Chloride
Registration Number:	01-2119497998-05
Synonyms:	Iron trichloride
Date of first issue:	17 January 2011
Version number	04
Revision date:	24-03-2016
Supersedes date:	04-03-2016

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

Identified uses	Use of iron salts in the treatment of raw water in the supply of either potable water or industrial process water Use of iron salts to treat waste water and in sludge treatment at waste water treatment plants (WWTP's)
Uses advised against	None

Details of the supplier of the safety data sheet

Manufacturer:	Chemifloc Ltd Smithstown, Shannon, Co. Clare, Rep. of Ireland. Tel: 00353 61 708699 Fax: 00353 61 708698 e-mail: info@chemifloc.ie
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Emergency Telephone Number: National Poison Information Centre,
00353 1 8379964

Section 2: Hazards Identification

Classification of the substance

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classificatory applies.

Classification according to Regulation (EC) no 1272/2008 as amended

Physical hazards

Corrosive to metals	Category 1	H290 ó May be corrosive to metals
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Health hazards

Serious eye damage/eye irritation	Category 1	H318 ó Causes serious eye damage
Skin corrosion/irritation	Category 2	H315 ó Causes skin irritation
Acute toxicity, oral	Category 4	H302 ó Harmful if swallowed

Hazard summary

Physical hazards	Not classified for physical hazards.
Health hazards	Irritating to eyes. Occupational exposure to the substance may cause adverse health effects
Environmental hazards	Not classified for hazards to the environment.
Specific hazards	Not available
Main symptoms	Not available.

Label elements**Label according to Regulation (EC) No. 1272/2008 as amended**

Contains: Iron (III) Chloride



Signal word	Danger
Hazard statements	H290 ó May be corrosive to metals. H318 - Causes serious eye damage. H315 ó Causes skin irritation. H302 ó Harmful if swallowed.
Precautionary statements	
Prevention	P280 ó Wear eye/face protection P264 - Wash hands thoroughly after handling.
Response	P305+351+338 ó IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P337+313 - If eye irritation persists: Get medical advice/attention. P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Hazardous components which must be listed on the label:

10028-22-5 Iron (III) Chloride.

Further information The product is classified and labeled in accordance with EC directives or respective national laws.

Other hazards: H290 Corrosive to metals only applies if pH <2

Section 3: Composition/Information on Ingredients**Substance****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Iron (III) Chloride	40-50	7705-08-0 231-729-4	01-2119497998-05	-	#
Water	50-60	7732-18-5			

Classification: CLP: Acute Tox. 4;H302, Skin Irrit. 2;H315, Eye Dam. 1;H318**Section 4: First Aid Measures**

General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. No hazards which require special first aid measures.
Description of first aid measures	
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Immediately flush skin with plenty of water. Get medical attention if irritation develops or persists.
Eye contact	Important! Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If possible use lukewarm water. Consult a physician. Do not rub the eyes, mechanical irritation. Continue rinsing eyes during transport to hospital.
Ingestion	If ingestion of a large amount does occur, seek medical attention. Rinse mouth with water.
Most important symptoms and effects, both acute and delayed	Corrosive effects, May cause irreversible eye damage.
Indication of any immediate medical attention and special treatment needed	Rinse with plenty of water.

Section 5: Firefighting measures

General fire hazards	Non-combustible, substance itself does not burn.
Extinguishing media	
Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing Media	None known.
Special hazards arising from the substance or mixture	The product itself does not burn. No unusual fire or explosion hazards noted. May decompose upon heating to produce corrosive and/or toxic fumes. In the event of fire hydrogen chloride may be formed.
Advice for firefighters	
Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective clothing.
Special firefighting procedures	No unusual fire or explosion hazards noted.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Stay upwind.
For emergency responders	Not available.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods and material for containment and cleaning up	Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas. Large Spills: Dike the spilled material, where this is possible. Soak up with inert absorbent material. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Sweep up or gather material and place in appropriate container for disposal. Following product recovery, flush area with water. After removal flush contaminated area thoroughly with water. Clean up in accordance with all applicable regulations. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. After removal flush contaminated area thoroughly with water. This material and its container must be disposed of as hazardous waste. For waste disposal, see Section 13.
Reference to other sections	Not available.

Section 7: Handling and storage

Precautions for safe handling	Avoid contact with eyes. Avoid prolonged exposure. Wash hands thoroughly after handling. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Keep only in the original container. Store in corrosive resistant/container with a resistant inner liner. Keep out of the reach of children. Store in rubber lined mild steel or plastic tanks. Avoid freezing. Keep away from incompatible materials.
Materials for packaging:	Suitable material: plastic (PE, PP, PVC), fiberglass-reinforced polyester, epoxy-coated concrete, titanium, acid proof or rubber-coated steel.
Materials to avoid:	Bases, non-acid proof metals (for example aluminium, copper and iron), Avoid contact with unalloyed steel or galvanized surfaces.
Other data:	Stable under recommended storage conditions.
Specific end use(s)	The specified uses for this material are shown in section 1 of this document.

Section 8: Exposure controls / personal protection

Control parameters

Occupational exposure limits

Ireland

United Kingdom

Components	Type	Value	Form
Iron (III) Chloride (7705-08-0)	STEL	2 mg/m ³	
	TWA	1 mg/m ³	

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Not available.

DNEL

Components

Components	Type	Route	Value	Form
Iron (III) Chloride (7705-08-0)	Consumer	Oral	0.29 mg/kg bw/day	as Fe
		Dermal	0.29 mg/kg bw/day	as Fe
		Inhalation	0.5 mg/kg bw/day	as Fe
	Industry	Dermal	0.57 mg/kg bw/day	as Fe
		Inhalation	2.01 mg/kg bw/day	as Fe

PNEC

Not available.

Exposure Controls

Appropriate engineering controls

Ventilation should be sufficient to effectively remove and prevent build-up of any dusts or fumes that may be generated during handling or thermal processing. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment.

General information

Use personal protective equipment as required. Eye wash fountain is recommended. Keep working clothes separately.

Eye/face protection

Wear eye/face protection. (EN166)

Skin protection

- Hand protection

PVC or other plastic material gloves. (EN374)

- Other

Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards

Not available

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

General information (Appearance, odour)

Physical State Aquous solution

Colour Brown

Odour Slightly pungent

Important health safety and environmental information

pH <1.0

Melting point/range -12 °C

Boiling point / range not applicable, In accordance with column 2 of REACH Annex VII, the study does not need to be conducted.

Flash point not applicable, In accordance with column 2 of REACH Annex VII, the study does not need to be conducted., inorganic compound

Flammability (solid, gas) does not sustain combustion.

Explosive properties

- **Lower explosive limit** not applicable

- Upper explosive limit	
Vapour Pressure	not applicable. In accordance with column 2 of REACH Annex VII, the study does not need to be conducted.
Density	1.42 g/cm ³
Solubility(ies)	
- Water solubility	miscible
Partition coefficient (n-octanol/water)	not applicable, inorganic compound.
Thermal Decomposition	Not available.
Other information	Crystallization point for 40% FeCl ₃ solution is 6 12 °C.

Section 10: Stability and reactivity

Reactivity	Not available
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals.
Incompatible materials	Bases, non-acid proof metals (for example aluminium, copper and iron) Avoid contact with unalloyed steel or galvanized surfaces.
Hazardous decomposition products	Hydrogen Chloride
Thermal decomposition	not available

Section 11: Toxicological information

Information on toxicological effects

Acute toxicity

Product

Ferric Chloride Solution (Mixture)

Test results

Acute Dermal LD50 Rat: 5000 mg/kg estimated
Acute Oral LD50 Mouse: 3250 mg/kg estimated
Subchronic Oral NOAEL Rat: 692 mg/kg estimated

Components

Iron (III) Chloride (7705-08-0)

Acute Dermal LD50 Rat: >= 2000 mg/kg
Acute Oral LD50 Mouse: 1300 mg/kg
Subchronic Oral NOAEL Rat: 277 - 314 mg/kg bw/day

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Skin Sensitisation	Not sensitizing
Respiratory Sensitisation	Not available
Germ Cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT - single exposure	The substance is not classified
STOT- repeated exposure	The substance is not classified
Aspiration hazard	Not classified.

Section 12: Ecological information

Toxicity

Components

Ferric Chloride Solution (Mixture)

Test results

EC50 Daphnia: 289 mg/l 48.00 hours estimated

LC50 Fish: 58.69 mg/l 96.00 hours estimated

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

Biological degradability:

The methods for determining the biological degradability are not applicable to inorganic substances.

Chemical degradation:

Remarks: Reaction with water forms iron hydroxide precipitates.

Bioaccumulative potential

Partition coefficient: n-octanol/water: not applicable, inorganic compound

Mobility in soil

Mobility

water solubility 6 soluble

Results of PBT and vPvB assessment

Not available.

Other adverse effects

Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. The product can hydrolyse and form a precipitate of iron hydroxide when diluted beyond a particular level. The solubility of the product is dependent on its pH value

Section 13: Disposal considerations

Waste treatment methods

Product

Classified as hazardous waste. Must be disposed of in accordance with local and national regulations.
Thoroughly cleaned packaging material may be recycled.

Contaminated packaging

Classified as hazardous waste. Must be disposed of in accordance with local and national regulations.

Section 14: Transport information

ADR/RID:

UN Number: 2582
Proper Shipping Name: FERRIC CHLORIDE SOLUTION
Transport hazard class(es) 8
Subsidiary class(es) 8
Packing group III
Environmental hazards No
Labels required 8
Special precautions for user Not available.
IATA
UN Number: 2582

UN Proper Shipping Name: FERRIC CHLORIDE SOLUTION
Transport hazard class(es) 8
Subsidiary class(es) 8
Packing group III
Environmental hazards No

Special precautions for user Not available.

IMDG

UN number 2582
UN proper shipping name FERRIC CHLORIDE SOLUTION
Transport hazard class(es) 8
Subsidiary class(es) 8
Packing group III
Marine pollutant No
EmS No. F-A, S-B
Special precautions for user Not available.



ADR



IATA



IMDG

Section 15: Regulatory information

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

EU Regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Directive 96/61/EC concerning integrated pollution prevention and control (IPPC): Article 15, European Pollution Emission Registry (EPER)

Iron (III) Chloride (CAS 7705-08-0)

Regulation (EC) No. 1907/2006, Article 59(1). Candidate List

Not listed.

National regulations Not available.

Other regulations This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. No restrictions identified other than those already covered in regulations.

Chemical Safety Assessment

Chemical Safety Assessments have been carried out for the components of the mixture.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals	Yes

	(EINECS)	
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances(PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

Section 16: Other information

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

H290	May be corrosive to metals
H318	Causes serious eye damage.
H315	Causes skin irritation
H302	Harmful if swallowed.

Training advice Not available

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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