الشركة السويدية الاردنية للكيماويات
SWEDISH JORDANIAN CHEMICALS

Material Safety Data Sheet
Ferric Chloride

Section 01 - Product Identifier and Company Identification

Product Name	Ferric (III) Chloride Solution
Chemical Formula	FeCl3
Product Use	Wastewater treatment, purifying factory effluents and deodorizing sewage, mordant in dyeing and printing textiles; pigments and inks; photoengraves.
Company Name	**Swedish Jordanian Chemicals Ltd.** King Hussein Bin Talal Development Area, Al Mafraq Phone: 00962-6-5855250 Fax: 00962-6-5866299 P.O. Box: 431, Amman 11810, Jordan Email: Info@sjcc.me Website: www.sjcc.me
Prepared By	Technical Department Phone: +962-6-5855250
Emergency Phone	Phone: +962-6-5855250

Section 02 - Composition/Information on Ingredients

Ingredient Name	**CAS Number**	**Range %**
Ferric Chloride	7705-08-0	30 - 45%
Hydrochloric Acid	7647-01-0	0.1 – 0.5%

Section 03 - Hazard Identification

Signal Word DANGER

Pictograms:

Classification	Corrosive to metals	Category 1
	Skin irritation	Category 2
	Serious eye damage	Category 1
	Acute toxicity	Category 4

Hazard Statement(s):	H290 May be corrosive to metals. H315 Causes skin irritation. H318 Causes serious eye damage. H302 Harmful if swallowed.
Precautionary Statement(s):	P234 Keep only in original container. 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. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower). P307+P311 IF exposed: Call a POISON CENTER or doctor / physician. P501 Dispose of contents/container in accordance with local/national regulation.
Other Hazards:	**Physico-chemical hazards:** Corrosive to metals. **Human health dangers:** The product temperature can be up to maximum of 50 C upon delivery. **Environmental hazards:** Does not contain any PBT of vPvB substances. **Other hazards:** Further hazards were not determined with the current level of knowledge.

Section 04 - First Aid Measures

General Information	Take off contaminated clothing and wash before reuse.
Ingestion	If ingested give 1 or 2 glasses of water. DO NOT INDUCE VOMITING. OBTAIN MEDICAL ATTENTION IMMEDIATELY.
Inhalation	Remove to fresh air. Keep warm and quiet. Consult physician.
Skin	Flush with water for 30 minutes. Remove contaminated clothing.
Eyes	Immediately, flush with large amounts of water for at least 15 minutes while holding eyelids apart. Washing within one minute is essential to achieve maximum effectiveness. Get immediate medical attention after flushing.
Effects of Overexposure	Symptoms of Ingestion: Abdominal pain, and prolonged vomiting may Overexposure begin up to one hour after ingestion of excessive quantities of soluble iron salts. Hematemesis, dehydration, shock, pallor, cyanosis, hypothermia, vasomotor instability, and coma may follow. If death is not immediate, it may occur 1-3 days later, survivors may develop reversible hemorrhagic necrosis. Gastric scarring may occur after 4 weeks. Pyloric stenosis and mild hepatic cirrhosis may persist.

Section 05 - Fire Fighting Measures

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable
Flash Points	Not applicable
Flammable Limits	Not applicable
Products of Combustion	Not available
Fire Hazards in Presence of Various Substances	Not applicable
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Not applicable
Special Remarks on Fire Hazards	Not applicable
Special Remarks on Explosion Hazards	Not applicable

Section 06 - Accidental Release Measures

Personal Precautions, protective equipment and emergency procedures	- Ensure adequate ventilation. - Use personal protective equipment (protective gloves, safety glasses, protective clothing). - High risk of slipping due to leakage/spillage of product.
Environmental Precautions	- Prevent spread over a wide area (e.g. by containment or oil barriers). - Do not discharge into the drain/surface waters/groundwater.
Methods and Material for Containment and Cleaning up	- Vacuum up spilled product. - Take up with absorbent material (e.g. acid binder). - Dispose of absorbed material in accordance within the regulations. - Rinse away small amounts with water.

Section 07 - Handling and Storage

Precautions For Safe Handling	- Use only in well-ventilated areas. - Avoid formation of aerosols - The product temperature can be up to a maximum of 50°C upon delivery. - Do not eat, drink, smoke or take drugs at work. - Use barrier skin cream. - After worktime and before work breaks the affected skin areas must be thoroughly cleaned. - Take off containment clothing and wash before reuse.

Precautions For Safe Storage	- Keep only in original container. - Provide acid-resistant floor. - Prevent penetration into the ground. - Do not store together with metals. - Do not store together with reducing agents. - Do not store with alkalies. - Do not store together with food and animal food. - Keep container tightly closed. - Keep container in a well-ventilated place.

Section 08 - Exposure Controls/Personal Protection

Control Parameters	Ingredients with occupational exposure limits to be mentioned (GB): Not Applicable. DNEL (Derived no-effect level) : Substance: Ferric (III) Chloride, CAS: 7705-08-0 - Industrial, dermal, long-term – systemic effect:2.8 mg/kg bw/day. - General population, oral, acute – local effects: 20 mg/kg bw/day. - General population, oral, long-term – systemic effects: 0.28 mg/kg bw/day. - General population, dermal, long-term – systemic effects: 1.4 mg/kg bw/day.
Additional Advice on System Design	- Ensure adequate ventilation on workstation. - Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
Eye Protection	- Tightly fitting goggles. (EN 166:2001) - Safety glasses (EN 166:2001)
Hand Protection	- 0.7mm Butyl rubber, >480 min (EN 374-1/-2/-3). - The details concerned are recommendations. Please contact the supplier for further information.
Skin Protection	Acid-resistant protective clothing.
Other	- Avoid contact with eyes and skin. - Do not inhale gases/vapours/aerosols. - Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory Protection	- Respiratory protection mask in the event of high concentration. - Short term: filter apparatus, combination filter E-P2 (DIN EN 14387).

Thermal Hazards	See Section 7.
Delimitation and monitoring Protection	Protect the environment by applying appropriate control measures to prevent or limit emissions.

Section 09 - Physical and Chemical Properties

Physical State	Liquid
Color	Brown
Odor	Characteristic
pH	< 1
pH-value (%1)	Not determined
Boiling Point/Range	Not determined
Flash Point (°C)	Not applicable
Flammability (solid, gas) (°C)	Not applicable
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Oxidising properties	Not applicable
Vapor Pressure/gas pressure(kPa)	< 0.1 (20°C)
Density (g/ml)	1.43 (20°C)
Bulk density (kg/m3)	Not applicable
Solubility in Water	Completely miscible
Partition coefficient(n-octanol/water)	Not applicable
Viscosity	20 mPa*s (20°C)
Relative vapor density determined in air	Not applicable
Evaporation Rate	Not applicable
Melting point	Not determined
Auto ignition temperature (°C)	Not applicable
Decomposition temperature (°C)	Not determined

Section 10 - Stability and Reactivity

Stability	The product is stable under standard conditions.
Incompatible Material	Corrosive to metals.

Hazardous Products of Decomposition	Hydrochloric Chloride (HCL).
Possibility of Hazardous Reaction	Reactions with alkalies (Iyes). Corrosive to metals. Reactions with reducing agents.

Section 11 - Toxicological Information

Acute Toxicity	**Product:** ATE-mix, inhalative (mist), > 5mg/l 4h. ATE-mix, dermal, > 2000 mg/kg. ATE-mix, oral, > 500 - < 1500 mg/kg. **Substance:** Ferric (III) Chloride, CAS 7705-08-0 LD50, oral, Mouse: 1300 mg/kg. LD50, oral, Rat: 301 mg/kg. LD50, dermal, Rat: > 2000 mg/kg.
Serious eye damage/irritation	Based on the available information, the classification criteria are fulfilled. Toxicology data of compete product are not available. Risk of serious damage to eyes. Calculation method.
Skin corrosion/irritation	Based on the available information, the classification criteria are fulfilled. Toxicology data of compete product are not available. Risk of serious damage to eyes. Calculation method.
Respiratory of skin sensitization	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Specific target organ toxicity – single and repeated exposure	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Mutagenicity	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Reproduction Toxicity	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Carcinogenicity	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.

Aspiration hazard	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.

Section 12 - Ecological Information

Toxicity	**Substance:** Ferric (III) Chloride, CAS 7705-08-0 LC50, (96h), Gambusia affinis: 75.6 mg/l (IUCLID). EC50, (48h), Daphnia magna: 27.9 mg/l (IUCLID).
Persistence	Behavior in environment compartments: Not Determined. Behavior in sewage plant: Not Determined. Biological degradability: Not Determined.
Bioaccumulative Potential	Not applicable.
Mobility in Soil	Spillage may penetrate the soil causing ground water contamination.
Results of PBT and vPvB assessment	Not applicable.

Section 13 - Disposal Consideration

Waste Disposal	Dispose in accordance with all government, provincial, and/or local regulations.
Ecology - waste materials	Avoid release to the environment.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.
Waste No.	160507 150102 150104

Section 14 - Transport Information

UN No.	UN 2582
Proper Shipping Name	Ferric (III) Chloride, Solution
Hazard Class/Division	8
Packing Group	III
IMDG EMS Fire **IMDG EMS Spill**	F-A S-B
Special Provisions (49 CFR 172.102)	B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance. IB3 - Authorized IBCs: Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3).

	TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees Celsius of the liquid during filling.
Bulk	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Other	Secure containers (full and/or empty) with suitable hold down devises during shipment.

Section 15 - Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS MSDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE JORDANIAN CONTROLLED PRODUCTS REGULATIONS. THIS MSDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

WQA Certification	Product is certified under WQA NSF/ANSI Standard 60 for coagulation and flocculation at a maximum dosage of 100 mg/L.
Guidance Notes	Workplace Exposure Limits EH40.
Statutory Instruments	The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716).
Hazard Label Warning	This product requires the following hazard label warning: Corrosive, Class 8.

Section 16 - Other Information

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.