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Vinayak Industries

MATERIAL SAFETY DATA SHEET (MSDS)

FERRIC CHLORIDE (LIQUID) SOLUTION

SECTION 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: **FERRIC CHLORIDE SOLUTION**
Product Use: Water Treatment Chemical CAS #: 7705-08-0
Product Formula: FeCl3

Company Identification:

VINAYAK INDUSTRIES
PLOT-3/11, GIDC,SARIGAM
ST-BHILAD.GUJRAT.
INDIA-396155
Company Phone Number: +912602781067
Emergency Phone Number: +919898615513

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient CAS # Weight Percentage
Water 7732-18-5 58 – 72% N/A N/A N/A
Ferric Chloride 7705-08-0 28 – 42% 1 mg/m3 1 mg/m3 N/A
Ferrous Chloride 7758-94-3 <0.5% 1 mg/m3 1 mg/m3 N/A
Hydrochloric Acid 7647-01-0 <0.5% 5 ppm 5 ppm N/A

SECTION 3 – HAZARD IDENTIFICATION

Appearance and Odor: Reddish-brown liquid with a slightly acidic odor.
Emergency Overview: A corrosive chemical. Harmful or fatal if swallowed. Harmful if inhaled. Eye or skin contact may cause irritation. Contact with liquid or vapor form of this chemical may cause severe injury or death. Avoid overexposure.
Fire and Explosion Hazards: Substance itself does not burn, but may decompose upon heating to produce corrosive and/or toxic fumes, such as hydrogen chloride and

	phosgene gas. Ferric chloride can react with metals to form flammable and potentially explosive hydrogen gas.
Carcinogenicity:	None of the components of this material are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

Summary of Acute Health Hazards

Ingestion:	Toxic by ingestion. May cause irritation to the mouth and stomach. Higher doses may lead to abnormal liver function with nausea or vomiting, stomach pain, diarrhea, fast and weak pulse, lethargy, pallor, shock, hypertension, dilated pupils, fever, coma and even death. Individuals with pre-existing liver diseases may have increased susceptibility to the toxicity of exposure.
Inhalation:	May cause irritation of the upper respiratory tract, resulting in difficulty breathing.
Skin Contact:	Irritation and possibly burns.
Eye Contact:	Irritation and possibly burns.

SECTION 4 – FIRST AID MEASURES

Eye Contact First Aid:	Immediately flush eyes for 15 minutes with large amounts of water while holding eyelids apart. Washing within one minute is essential to achieve maximum effectiveness. Obtain medical attention IMMEDIATELY after flushing.
Skin Contact First Aid:	Flush skin with water. Remove contaminated clothing; wash before reuse.If irritation is still present, seek medical attention IMMEDIATELY.
Inhalation First Aid:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult,give oxygen. Obtain medical attention IMMEDIATELY.
Ingestion First Aid:	DO NOT INDUCE VOMITING. Give 1 or 2 glasses of water or milk. Never give anything by mouth to an unconscious individual. Obtain medical attention IMMEDIATELY.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point:	Not applicable.
Upper/Lower Explosion Limits in Air:	Not applicable.
Auto Ignition Temperature:	Not applicable.

Extinguishing Media: Will not burn; use materials appropriate for surrounding fire.

Fire and Explosion Hazards: Substance itself does not burn, but may decompose upon heating to produce corrosive and/or toxic fumes, such as hydrogen chloride and phosgene gas. Ferric chloride can react with metals to form flammable and potentially explosive hydrogen gas.

Fire Fighting Instructions: Firefighters should wear proper protective equipment and selfcontained breathing apparatus with full face-piece operated in a positive pressure mode. Move exposed containers from fire area if it can be done without risk. Use water to keep fire-exposed containers and tanks cool.

Hazardous Product of Decomposition or Combustion:
Hydrogen chloride, hydrogen,phosgene.
NFPA Rating HMIS Rating 4 = Extreme / Severe
Health 2 2 3 = High / Serious
Reactivity 0 0 2 = Moderate
Flammability 0 0 1 = Slight

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Review safety precautions before proceeding with cleanup. Use appropriate personal protection equipment. Do not touch spilled material. Neutralize spill with lime (calcium hydroxide), limestone (calcium carbonate), or soda ash (sodium carbonate). Restrict access to area until completion of clean up.

Caution: limestone and soda ash will evolve CO2; ventilation should be provided in enclosed areas. Dike area around spill to prevent spreading, and use absorbent material to pick

CERCLA Reportable Discharge (RQ): 1000 lbs. (454 kg), Based on anhydrous ferric chloride. Divide by solution concentration to obtain solution weight.

Disposal: Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine whether a substance should be classified as a hazardous waste at the time of disposal. This is due to the fact that product use, transformation, synthesis, mixtures, etc. may change the nature of the product. Dispose of waste in accordance with applicable federal, state, and local laws.

RCRA: Test waste material for corrosivity, DOO2, prior to disposal.

Steps To Be Taken In Case Material Is Released Or Spilled:
Notify the appropriate environmental authorities. Note that spills may need to be reported to the National Response

SECTION 7 – HANDLING AND STORAGE

Handling:	Store and handle in corrosion-proof materials (and area). Use FRP or PVC pipes. Be cautious of substance residue in empty containers. Act according to precautions and warningsset forth.
Storage:	Store in a tightly closed container. Do not store in metal containers. Fiberglass,plastic, or rubber-lined tanks may be used for storage. Protect from damage and keep separated from incompatible substances.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection:	Adequate general ventilation should be provided to keep vapor and mists below exposure limits. The exposure limits for some components are listed in Section 2. Wear a NIOSH/OSHA approved respirator with a dust/mist cartridge if there is potential of exposure to mists in excess of applicable limits, in any situation where product vapor or mists may be present, such as in confined spaces.
Eye Protection:	Wear splash resistant goggles and/or safety glasses with side shields. Wear a full face shield if possibility of material splashing or spraying exists. Maintain eye wash fountain. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.
Skin Protection:	Where there is possibility of skin contact, use the following as appropriate, to avoid skin contact: gloves impervious to material, apron, boots, hood, pants, and jacket. Maintain a safety shower with quick opening valves. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	106oC (223oF) pH: < 2.0
Melting Point:	N/A Solubility in Water: Complete
Specific Gravity:	1.2 – 1.6 Vapor Pressure: 40 mm Hg @ 20oC
Volatile:	75 (Water) Evaporation Rate: N/A
Vapor Density (Air = 1):	N/A Molecular Weight: 162.2
Appearance:	Red/Brown Colored Liquid Odor: Slightly acrid

SECTION 10 – STABILITY AND REACTIVITY

Stability:	Stable at normal conditions
Polymerization:	Will not occur.
Decomposition:	Decomposes upon heating to produce corrosive and/or toxic fumes, such as hydrogen chloride. Contact with metals may evolve flammable hydrogen gas.
Incompatibility:	Rapidly corrodes most metals (titanium is one exception); may generate flammable, potentially explosive hydrogen gas. Avoid contact with nylon, aluminum/aluminum alloys, carbon steel, stainless steel, and copper / copper alloys. Metals, bases, halocarbons, acids, and combustible materials can be considered incompatible.

SECTION 11 – TOXOLOGICAL INFORMATION

Chronic Effects:	Repeated dosage may cause hemosiderosis, including possible damage to liver and pancreas.
Toxicological Data:	Anhydrous Ferric Chloride Solid Oral LD50 (rat) = 450 mg/kg
Carcinogenicity:	None of the components of this material are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.
Reproductive Effects:	TDLo Rat 1 day (intratesticular) 12976 !"/!"; TDLo Rat 1 day (intravaginal) 29 mg/kg pre pregnancy continuous.
Target Organs:	No data available.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicological Information:	TLm Daphnia 15 ppm/96 hr fresh water/ conditions of bioassay not specified.
Persistence and Degradation:	No data available

SECTION 13 – DISPOSAL CONSIDERATIONS

Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine whether a substance should be classified as a hazardous waste at the time of disposal. This is due to the fact that product use, transformation, synthesis, mixtures, etc. may change the nature of the product. Product containers should be thoroughly emptied before disposal. Dispose of waste in accordance with applicable federal, state, and local laws.

SECTION 14 – TRANSPORTATION INFORMATION AS PER IATA

Shipping Name:	**FERRIC CHLORIDE (LIQUID) SOLUTION**
Hazard Class:	8 – Corrosive Material
UN Number:	UN 2582
Packing Group:	III
Shiping containers:	Rubber-lined steel tank cars/trucks; polyethylene drums,ibc& bottles
Storage Conditions:	Keep containers closed

SECTION 15 – REGULATORY INFORMATION

OSHA:	Hazardous Corrosive Liquid
CERCLA:	Hazardous Substance
Clean Water Act:	Designated as a hazardous substance

SECTION 16 – OTHER INFORMATION

IMPORTANT!

Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure.

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