

Safety Data Sheet

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

1.Product and Company Identification

Item Name: : Polymeric Ferric Sulfate	
Manufacturer or supplier	Company: Jongmaw chemical Co., Ltd.
	Address:No6 Jing Hwa Rd. Jung Kang City Tainan County Taiwan
	Tel: +886-62333503 Fax: +886-62336125
Emergency Contact Phone: +886-62333503 Fax: +886-2336125 (Monday to Friday, 8:00 am ~ 5:00 pm)	

2.Hazard identification information

Hazard Classification

1. Acute oral toxicity level : Category 4
2. Acute dermal toxicity level : Category 4
3. Skin irritation / corrosion level : Category 2
4. Serious injury / eye irritation level : Category 2A

Labeling :

Pictograms : Symbol Classified according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (UN GHS) as GHS05 (Corrosion) and GHS07 (Exclamation Mark).



Signal Word : Danger

Hazard Statements :

1. Harmful if swallowed.
2. Contact with skin, causing skin irritation
3. Eye contact with harmful, causing serious eye irritation

Precautionary Statements :

1. If contact with eyes, wash immediately with plenty of water and then seek medical
2. Once contaminated clothing, take off immediately
3. Wear proper protective clothing, gloves, goggles, face shield

3.Component identification information

Name : Polymeric Ferric Sulfate
Synonyms : Iron-based coagulant, Polyiron, Polyferric, Polyiron Sulfate (or Polyferric Sulfate)

CAS No. : 35139-28-7	
Formula : $[\text{Fe}_2(\text{OH})_n (\text{SO}_4)_{3-\text{N}/2}]_m$	Chemical properties : Corrosive
Purity (w/w) : Fe^{3+} (6~10%)	Molecular Weight : N/A
Use : Primary coagulant for water and wastewater treatment	

4. First Aid Measures

Different routes of exposure of first aid :

Skin contact :

1. Wash Immediately with plenty of water for 15 minutes °
2. Removing contaminated clothing and shoes °
3. Medical treatment as soon as possible °

Eye contact :

1. Wash immediately with plenty of water more than 15 minutes, turning from time to time to upper and lower eyelids °
2. Medical treatment as soon as possible °

Ingestion :

1. Do not induce vomiting °
2. If the patient is conscious, drink a lot of milk or magnesium emulsion °
3. If the patient is unconscious or convulsions, do not feed anything °
4. Medical treatment as soon as possible °

Symptoms and hazardous effects :

1. Stimulate the skin to make it red, pain °
2. Conjunctival hyperemia, blurred vision °
3. Gastrointestinal corrosion, sore throat, abdominal pain, diarrhea, nausea phenomenon °

Protection of emergency personnel :

1. Should wear protective gloves, safety glasses °
2. swallowed do not induce vomiting and administer artificial respiration °

Notes to physician : Swallowed do not induce vomiting, milk and edible acid °

5.Fire-fighting Measures

Suitable Extinguishing Media:Use extinguishing agents appropriate for the surrounding fire. This product is non-flammable but is corrosive.

Fire Hazards : Not flammable, low temperature evaporation of acidic gases, high temperature decomposition of nitrogen oxides when the gas

Special Firefighting Procedures:Not applicable.

Special Protective Equipment for Firefighters:

Firefighters should wear full-face self-contained breathing apparatus (SCBA) and full protective firefighting clothing (structural firefighter's protective gear) for adequate protection.

6. Accidental Release Measures

Personal precautions : Wear acid-fast, waterproof overalls and full protective equipment including rubber gloves, rubber work shoes ◦

Methods for cleaning up and Environmental Considerations :

1. A small leak or drip, the need to wipe or wipe, and the solution drip down on the waste water treatment pond ◦
2. A lot of leakage, the use of soil or non-combustible absorbent material put containment building, then soda ash or lime and in carefully; such as soda ash required to use proper ventilation, drain itself of carbon dioxide waste in the container unit and lawful processing; waste solution down to the pool water treatment ◦
3. And not in the material to avoid entering sewers, drains, surface water and soil ◦

7. Handling and Storage

Safe disposal :

1. Prohibited in the workplace in eating, drinking and smoking ◦
2. The operation is completed, wash hands thoroughly ◦
3. required before entering the dining remove contaminated clothing and protective equipment ◦
4. Eyes, skin or clothing do not contact with this material ◦

Storage methods and conditions :

1. In order to avoid corrosion caused by acid vapors environment when not in use, the container should be closed ◦
2. Store in a cool, dry and ventilated area away from direct sunlight cause deterioration ◦
3. Store in rubber lined steel drums or plastic containers, away from all other chemicals and possible sources of contamination ◦
4. Containers even empty, there may be residue and vapors, to comply with hazard warning and a way to operate the operating empty bucket full bucket ◦

8. Exposure Controls

Engineering Controls : 1. Use local exhaust ventilation.

2. Preferably operate within a closed system.

Control Parameters: No established occupational exposure limits.

Personal Protective Equipment :

Eye Protection :

Use chemical safety goggles. A hood-type or half-face respirator may be used if there is a risk of exposure.

Contact lenses should not be worn when handling this substance, as they may increase the severity of eye injuries in case of an accident.

Respiratory Protection : If vapor or mist is present, use an acid-resistant, droplet-type full-face or half-face air-purifying respirator. For high exposure levels, use a pressure-demand

self-contained breathing apparatus (SCBA) or a supplied-air respirator. Protective clothing and

Protective clothing and footwear : Wear long-sleeved shirts, long pants, acid-resistant rubber shoes, gloves, and aprons or coveralls.

Safe Operation : 1. Keep containers tightly closed when not in use. 2. Wash hands and exposed skin thoroughly after handling. 3. Avoid contact with eyes, skin, and clothing. 4. Residues in empty containers should be handled with the same precautions as full containers, as they may still pose hazards.

Ventilation : Use local mechanical exhaust ventilation to minimize airborne concentrations during handling.

Health measures : 1. Operation should wear protective gloves, safety glasses ◦

2. Clothes are contaminated with dilute oxalic acid solution when cleaning ◦

9. Physical and Chemical Properties

Chemical properties : Corrosive	Molecular Weight : N/A
Physical state : Acid solution	Density (Water=1) : 1.30~1.5(20°C)
Color : Yellow-green to brown	Form : Liquid
pH : < 2 (1g/L)	Smell : Acidic odor
Decomposition temperature : N/A	Boiling point/ Range : N/A
Auto-Ignition temperature : N/A	Flash Point : N/A Test Method : N/A
Vapor Density(Air =1) : N/A	Explosion limits : N/A
Vapor pressure : 10 mmHg (may vary with concentration and temperature)	

10. Stability and Reactivity

Stability : Stable
Special Conditions of hazardous reactions : No Data
Conditions to be avoided : Avoid copper, iron, aluminum and other metals when the containers, it is appropriate pottery, plastic or glass containers
Materials to avoid : Copper, iron, aluminum
Hazardous decomposition : Nitrogen oxide, sulfur oxide gases
Incompatible substances : Alkali and metal

11. Toxicity Data

Acute toxicity : No Data
Skin corrosive : Irritation

Serious eye damage : Irritation
Respiratory or skin allergy : Skin contact can cause skin irritation
Germ cell mutagenicity : No Data
Carcinogenicity : No Data
Reproductive toxicity : No Data
Target Organ Toxicity – Single exposure : No Data
Target Organ Toxicity - Repeated exposure : No Data
Inhalation hazard : Long-term inhalation of acidic gases, affects there spiratory system

12. Ecological Information

Possible environmental impact / environmental flow fabric :

1. Exposed to the atmosphere, there will be acidic smell oven, air pollution
2. Runoff to water, it will form a reddish-brown precipitate, causing river pollution
3. Flow to the soil, resulting in red-brown soil pollution and groundwater pollution, water quality

13. Waste Disposal Methods

Waste disposal methods :

1. Empty containers will be residues, gases and droplets, to be treated according to the above RELEASE
2. Liquid waste disposal , To qualified institutional re-use recycling process
3. Using the proper handling of the material handled by the leakage of contaminated materials and substances used when cleaning up
4. to consult appropriate government authorities to seek appropriate treatment

14. Shipping Information

Proper shipping name : Ferric Chloride Solution
UN/NA # : UN 2582
Hazard Label : Class 8
Packing Group : III
Domestic Transport Regulations (Taiwan) :
<p>Road Transport : According to Article 84 of the "Road Traffic Safety Regulations": Dangerous goods must be transported by qualified vehicles, operated by licensed drivers and escorts authorized for hazardous materials. Relevant labeling, loading/unloading, parking, and driving safety regulations must be strictly followed.</p> <ol style="list-style-type: none"> 1. Special transport methods and precautions: <ol style="list-style-type: none"> 1.1. Transport vehicles must be approved for hazardous goods (e.g., certified tankers or sealed containers), and must carry valid inspection certificates issued by the competent authority. 1.2. During transport, appropriate hazard labels (Class 8 – Corrosive substances) and the UN number (UN 2582) must be prominently displayed. 1.3. Tankers must be equipped with leakage containment equipment and must not be loaded

together with alkaline substances or incompatible chemicals.

- 1.4. Loading/unloading operations must be carried out by trained personnel wearing appropriate personal protective equipment (PPE).

Sea Transport (IMDG Code) : According to the “Regulations Governing the Carriage of Dangerous Goods by Ships,” shipments must comply with the IMDG Code regarding packaging, labeling, and classification.

1. Proper shipping name : Ferric Chloride Solution
2. UN Number : UN 2582
3. Hazard Label : Class 8 (Corrosive substances)
4. Packing Group : III
5. Packaging must pass corrosion resistance and leak-proof tests.
6. Packaging must comply with the IMDG Code requirements for Packing Group III, with correct labels and the proper shipping name clearly displayed.
7. UN 2582 and Class 8 hazard label must be indicated; a Dangerous Goods Declaration (DGD) must be submitted prior to shipment.
8. Ships must have designated cargo holds suitable for Class 8 substances, as per the IMDG Code stowage and segregation requirements.

Air Transport (IATA DGR) : Air transport must comply with the IATA Dangerous Goods Regulations (DGR), including the relevant appendices on packaging, labeling, and classification.

1. Proper shipping name : Ferric chloride solution
2. UN Number : UN 2582 (Refer to IATA Dangerous Goods List – Table 4.2)
3. Hazard Label : Class 8 (Corrosive substances)
4. Packing Group : III
5. Passenger Aircraft :
 - 5.1. Packing Instruction : PI852
 - 5.2. Max net quantity per package : 5 L
 - 5.3. Limited Quantity : PI Y841
6. Cargo Aircraft Only :
 - 6.1. Packing Instruction : PI856
 - 6.2. Max net quantity per package : 60 L
7. Special Provisions : A3, A803
8. Environmental Hazards : Not applicable
9. Emergency Response Guide (ERG) Code : 8L

15. Legal Information

Applicable laws and regulations :

1. Regulations for Labelling and Hazard Communication of Hazardous Chemicals(Promulgated by the Ministry of Labor, Executive Yuan)
2. Road Traffic Safety Rules(Promulgated by the Ministry of Transportation and Communications, Executive Yuan)

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| 3. Standards for Storage, Collection, and Disposal Methods and Facilities of Industrial Waste(Promulgated by the Environmental Protection Administration, Executive Yuan) |
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16.Other Information

References:

1. Industrial Technology Research Institute of Industrial Safety and Health Technology Development Center, Material Safety Data Sheet
2. Chemical Industry Press, He Tielin editor, water treatment chemicals, manual, 46 ~ 49
3. Council of Labor Affairs, Emergency Response Guide.

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