

# MATERIAL SAFETY DOCUMENT STANDARD

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## Section 1. Chemical Information

- 1) Brand Name : Ferrous Sulfate Monohydrate
- 2) Molecular Formula :  $\text{FeSO}_4 \cdot \text{H}_2\text{O}$  Crystallized Solid
- 3) General chemical features : Crystallized Solid Inorganic Compound
- 4) Application of the product  
Agent for sewage and waster water treatment, Inorganic Nutrition for animal feed, and etc.

## Section 2. Composition / Information on Ingredients

- 1) Ingredient : Ferrous Sulfate Monohydrate
- 2) CAS NO.: 7782-63-0
- 3) Content :  $\text{Fe}^{2+}$  = 18.4% min

## Section 3. Hazards Identification

- 1) Emergency Overview :  
No Scent. Absorptive red-brown crystallized solid. Dangerous for swallowing.  
May cause burns in mucous membrane. May cause irritating on eyes and skin. May cause difficulty in breathing.  
Do not contact on eyes, skin, and garments. Do not breathe the dust.  
Containers need to make airtight. Wash out after handling the product.  
Wash hands after handling the product.

Need to be treated with proper ventilation.

## 2) Potential Health Effects

### - Inhalation :

Short Term Exposure : May cause Irritating

Long Term Exposure : N/A

### - Skin Contact :

Short Term Exposure : May cause irritating.

Long Term Exposure : May cause irritating.

### - Eye Contact :

Short Term Exposure : May cause irritating.

Long Term Exposure : May cause irritating.

### - Ingestion :

Short Term Exposure : Dangerous for swallowing. May cause burns, metal taste, yellow color change in eyes and skin, vomiting, diarrhea, low blood pressure, Drowsiness, Pneumonic hemorrhage, convulsion, shock, or coma

Long Term Exposure : Ditto.

## 3) Carcinogen Status :

OSHA : None

NTP : None

IARC : None

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## Section 4. First Aid Measures

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### 1) Inhalation :

Seek fresh air immediately. If necessary, perform CPR.

Keep the patient warm and comfortable. If needed, seek medical advice.

### 2) Skin Contact :

Remove contaminating clothing and shoes immediately. Wash out with soap or mild detergent and large amount of water until no evidence of chemical remains (at least 15-20minutes). Seek medical advice immediately.

### 3) Eye Contact :

Wash eyes immediately with large amount of water or normal water or normal saline solution occasionally lifting upper and lower lids until no evidence of chemical remains (15-20minutes). Wash eyes with neutral saline solution until pH value is neutral (30-60minutes). Wrap up with neutral bandage. Seek medical advice immediately.

### 4) Ingestion :

Make the patient vomit by medicine. Perform gastrolavage with 1L water contained 20mg/L

bicarbonate and Deferoxamine 2g/L. Make 5% Bicarbonate Chloride 50mL and Deferoxamine 10g remain in the stomach.

Keep normal vital signs. Seek medical advice immediately. Make sure the medical treatments perform by professional medical staff.

5) Antidote

No particular antidote. Make the medical treatments perform by professional medical staff step by step.

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## **Section 5. Fire Fight Measures**

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1) Fire and Explosion Hazards:

Danger of fire through carelessness in case heat or flame is exposed.

2) Suitable Fire Extinguishing Media :

Use powdery extinguishing agents, Carbon Dioxide, or water for surrounding fire.

3) Extinguishment :

First remove the containers from fire if possible.

Water the sides of containers until the fire is extinguished..

Build embankments for storing water in order for cleanup.

Do not inhale the vapor or dust. Need ventilation.

4) Harmful Thermal Decomposition Products :

Fire may produce toxic thermal decomposition contained Phosphorus Oxide.

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## **Section 6. Accidental Release Measures**

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1) Release when operating :

Keep the products in clean and dry containers.

Do not throw away spilled materials into sewage.

Keep out except the relevant staff.

2) Standard released amount for report (RO) : 100Lb

According to SARA regulation, the release exceed the above amount should be reported to the relevant organization.

3) Release onto soil

Make a pond or storage hole in the ground for keeping the released or polluted materials or water and build embankments with sand bags or cements. Neutralize with Agricultural lime, slack lime, powdery lime, or Sodium Bicarbonate.

4) Release into water

Neutralize with Agricultural lime, slack lime, powdery lime, or Sodium Bicarbonate. Use chemical flour

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and remove pollute or precipitated sediment.

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## **Section 7. Handling and Storage**

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Store and handle in accordance with all current related environmental regulations and standards of local communities and the government.

Keep out corrosive materials.

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## **Section 8. Exposure Controls / Personal Protection**

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1) Exposure Limit :

OSHA TWA : N/A

ACGIH TWA : N/A

NIOSH recommended TWA : N/A

2) Ventilation :

Install confined ventilation system.

Ensure compliance with applicable exposure limits

3) Eye Protection :

Wear safety glasses or goggles.

4) Emergency for Eye Contact :

Provide an emergency eye wash fountain and quick drench shower equipment in the operation area.

5) Skin Protection :

Protective Clothing is not required. However, avoid repeated and continuous skin contact.

6) Hand Protection :

Standard industrial type rubber gloves are not required, but recommended.

7) Respiratory Protection :

- If vapor concentration is suspected to be high :

use a pressure-demand or other positive-pressure mode in combination with separate escape supply.

- Escape : any air-purifying respirator with a full face piece and a high efficiency specialized filter

- In case of fire or danger to life or health :

Any supplied air respirator with full face piece and operated in a pressure-demand or other positive-pressure mode in combination with separate escape supply  
Certain respiratory protection with self-efficiency breathing apparatus with a full face piece

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## Section 9. Physical and Chemical Properties

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- 1) Appearance : No Scent. Absorptive red-brown crystallized solid
- 2) Molecular Weight : 169.8
- 3) ) Molecular Formula :  $\text{FeSO}_4 \cdot \text{H}_2\text{O}$  Crystallized Solid.

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## Section 10. Stability and Reactivity

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- 1) Reactivity : stable at room temperature and pressure
- 2) Conditions to avoid : avoid scattering the dust in the air.
- 3) Materials to avoid :
  - Basic Reaction
  - Arsenic Trioxide + Sodium Nitrate Salt: cause spontaneous and farmable compound
  - Carbonic Acid Salt
  - Golden Salt
  - Acetate Lead
  - Lime and Water
  - Cyanogens Acetate Ethyl : Decomposing explosively in 25 celcius
  - Potassium Iodine
  - Sodium Borate
- 4) Hazardous Decomposition Products :

Fire may produce toxic thermal decomposition contained Phosphorus Oxide

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## Section 11. Toxicological Information

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- 1) Toxicological Information :
  - Carcinogen Status : N/A
  - Topical Effects : Corrosion-Eyes, Ingestion, Irritation-Inhalation, skin
  - Acute Poisoning : Weak poisoning through ingestion
  - Intoxication can give bad effects on liver, kidneys, or Respiratory Disorders
  - Medical Conditions aggravated by exposure : N/A
- 2) Effects on health :
  - Inhalation :

Acute Exposure : May cause breathing difficulty and irritating.

Chronic Exposure : N/A
  - Skin contact :

Acute Exposure : Irritating

Chronic Exposure : Repeated and continuous exposure may cause skin disease.

- Eye Contact :

Acute Exposure : Blood-shot eyes and tears or pain on eyes

Chronic Exposure : Ditto.

- Ingestion :

Acute Exposure : May cause vomiting, nausea, diarrhea, Low blood pressure, dehydration,  
Pneumonic hemorrhage,

convulsion, shock, or coma

Chronic Exposure : N/A

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## **Section 12. Ecological Information**

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1) Ecological Effect Index (0-4) : N/A

2) Ecotoxicity : N/A

3) Decomposition : N/A

4) Bioaccumulation Potential Index (BCF) : N/A

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## **Section 13. Disposal Considerations**

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Dispose in accordance with all current related environmental regulations and standards of local communities and the government.

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## **Section 14. Transportation Information**

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Use airtight containers or tank lorry truck .

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## **Section 15. Regulatory Information**

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1) Korean Regulation :

Industrial safety and health law : acceptable

2) U.S. Regulation :

TSCA INVENTION STATUS : Y

CERCLA SECTION 103 (40CFR302.4) : Not listed

SARA SECTION 302 (40CFR355.30) : N

SARA SECTION 304 (40CFR355.40) : N

SARA HAZARD CATEGORIES. SARA SECTION 311/312 (40CFR370.21) :

ACUTE : N

CHRONIC : N

FIRE : N

REACTIVE : N

SUDDEN RELEASE : N

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**Section 16. Other Information**

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The above data are made based on the Material Safety and Health Data issued by Korean Industrial Safety Organization.

This data do not provide guarantee for legal responsibility for toxic chemicals and are just for research and confirmation of your esteemed company.

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