

Material Safety Data Sheet

Ferrous Sulfate Heptahydrate

Section 1: Chemical Product and Company Identification

Product Name : Ferrous Sulfate Heptahydrate
Chemical Formula : $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
Company Identification : Tradeasia International Pte Limited
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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Ferrous sulfate heptahydrate	7782-63-0	100

Toxicological Data on Ingredients: Ferrous sulfate heptahydrate: ORAL (LD50): Acute: 1520 mg/kg

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to liver. The substance may be toxic to kidneys, cardiovascular system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

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. Explosive in presence of heat.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep locked up.. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, alkalis.

Storage:

Hygroscopic. Air Sensitive. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 1 CEIL: 2 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance	: Solid.
Odor	: Not available.
Taste	: Not available.
Molecular Weight	: 278.01 g/mole
Color	: Blue to blue-green. (Light.)
pH (1% soln/water)	: Not available.
Boiling Point	: Not available.
Melting Point	: Not available.
Critical Temperature	: Not available.
Specific Gravity	: 1.898 (Water = 1)
Vapor Pressure	: Not applicable.
Vapor Density	: Not available.
Volatility	: Not available.
Odor Threshold	: Not available.
Water/Oil Dist. Coeff.	: Not available.
Ionicity (in Water)	: Not available.
Dispersion Properties	: See solubility in water.
Solubility	: Soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatibles

Incompatibility with various substances:

Reactive with oxidizing agents, alkalis. Slightly reactive to reactive with moisture.

Corrosivity: Not available.

Special Remarks on Reactivity:

Hygroscopic. Oxidizes when in contact with moisture to form ferric sulfate. Air Sensitive Incompatible with alkalies, soluble carbonates, Au and Ag salts, Pb acetate, lime water, KI, K, and Na tartrate, Na Borate, tannin, vegetable astringent infusions and decoctions.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 1520 mg/kg [Mouse].

Chronic Effects on Humans:

MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. Causes damage to the following organs: liver. May cause damage to the following organs: kidneys, cardiovascular system, central nervous system (CNS).

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals:

Lowest Published Lethal Dose LDL [Rat] - Route: Oral; Dose: 1389 mg/kg

Special Remarks on Chronic Effects on Humans:

May affect genetic material (mutagenic). It is excreted in maternal milk in animal.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: May cause respiratory tract irritation. Ingestion: Harmful if swallowed. May cause gastrointestinal tract disturbances and irritation with nausea, vomiting, colic, constipation, diarrhea,

black stool. May also affect behavior/Central Nervous System (somnolence -general depressed activity), respiration, cardiovascular system, liver, kidneys (pink urine discoloration). Chronic Potential Health Effects: Repeated exposure via ingestion may increase iron levels in the liver, and spleen. Damage may occur to spleen and liver.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut carcinogen reporting list.: Ferrous sulfate heptahydrate Illinois toxic substances disclosure to employee act: Ferrous sulfate heptahydrate New York release reporting list: Ferrous sulfate heptahydrate Pennsylvania RTK: Ferrous sulfate heptahydrate Massachusetts RTK: Ferrous sulfate heptahydrate Massachusetts spill list: Ferrous sulfate heptahydrate New Jersey spill list:

Ferrous sulfate heptahydrate Louisiana spill reporting: Ferrous sulfate heptahydrate CERCLA:
Hazardous substances.: Ferrous sulfate heptahydrate: 1000 lbs. (453.6 kg)

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR
1910.1200).

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

R36/38- Irritating to eyes and skin. S2- Keep out of the reach of children. S46- If swallowed, seek
medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 3

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent.
Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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