

Material Safety Data Sheet (MSDS)

Product Name: Ferrous Sulphate Monohydrate IP Grade

MSDS Generate Date: 20-05-2017

Revision Date: 30-12-2024

Supplier:

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1. Identification of the Substance/Preparation and Company

Product Name: Ferrous Sulphate Monohydrate

Chemical Name: Iron (II) Sulphate Monohydrate

Molecular Formula: $\text{FeSO}_4 \cdot \text{H}_2\text{O}$

Molecular Weight: 169.93 g/mol

Synonyms: Green Vitriol, Copperas

Use: Pharmaceutical ingredient, nutritional supplement (iron source), laboratory reagent, and industrial applications.

2. Hazard Identification

Ferrous Sulphate Monohydrate is classified as hazardous under the Globally Harmonized System (GHS). It falls under the following categories: Acute Toxicity (Oral) Category 4, Eye Irritation Category 2A, and Skin Irritation Category 2.

The signal word is "**Warning.**" The primary hazard statements include: *H302 – Harmful if swallowed*, *H315 – Causes skin irritation*, and *H319 – Causes serious eye irritation*.

Precautionary measures should include avoiding contact with skin and eyes, washing hands thoroughly after handling, and wearing protective gloves and eye protection. If swallowed, seek medical attention immediately. In case of eye contact, rinse cautiously with water for several minutes and remove contact lenses if present.

3. Composition / Information on Ingredients

Ferrous Sulphate Monohydrate (CAS No. 17375-41-6) is a single-component chemical substance with a purity level of **not less than 99%**. It is supplied as a pale green crystalline solid. No other hazardous impurities are intentionally added or present in significant concentrations.

4. First Aid Measures

Inhalation: Move to fresh air. Seek medical attention if irritation persists.

Skin Contact: Wash thoroughly with soap and water. Remove contaminated clothing.

Eye Contact: Rinse immediately with plenty of water for at least 15 minutes. Get medical attention.

Ingestion: Rinse mouth and drink water. Do not induce vomiting. Seek immediate medical assistance.

5. Fire Fighting Measures

Suitable Extinguishing Media: Water spray, dry chemical, carbon dioxide, or foam.

Special Hazards: Non-flammable; may emit toxic fumes of sulphur oxides and iron oxides under fire conditions.

Protective Equipment: Firefighters should wear self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Avoid dust formation and wear appropriate protective equipment. Sweep up the material carefully, avoiding dust dispersion, and place it in a suitable container for disposal. Prevent material from entering drains or waterways.

7. Handling and Storage

Avoid contact with skin, eyes, and clothing. Handle in dry conditions with adequate ventilation. Store in a cool, dry, and well-ventilated area away from moisture, alkalis, and strong oxidizers.

8. Exposure Controls / Personal Protection

Use local exhaust ventilation to control dust exposure. Wear appropriate personal protective equipment including safety goggles, gloves, and dust masks. No occupational exposure limits have been established for this compound.

9. Physical and Chemical Properties

Appearance: Pale green crystalline solid

Odor: Odorless

pH (1% solution): 3.0–4.0

Melting Point: Decomposes at ~300°C

Solubility: Soluble in water

Specific Gravity: 1.89

Stability: Hygroscopic

10. Stability and Reactivity

Stable under recommended storage conditions. Avoid exposure to moisture and air.

Incompatible with strong oxidizing agents and alkalis. Decomposition may release sulphur oxides and iron oxides.

11. Toxicological Information

Acute Oral Toxicity (rat) LD₅₀: 319 mg/kg. Causes eye and skin irritation. Prolonged or repeated exposure may lead to systemic iron accumulation. Not classified as carcinogenic.

12. Ecological Information

Harmful to aquatic life if released in significant quantities. Not biodegradable but may dissolve and disperse in water. Low bioaccumulation potential.

13. Disposal Considerations

Dispose of in accordance with local, regional, and national regulations. Avoid release into the environment. Do not discharge into drains or surface waters.

14. Transport Information

Ferrous Sulphate Monohydrate is classified as an environmentally hazardous substance for transport purposes. The UN number assigned to this material is UN 3077, and the proper shipping name is *Environmentally Hazardous Substance, Solid, N.O.S. (contains Ferrous Sulphate Monohydrate)*. It falls under Transport Hazard Class 9 (Miscellaneous Dangerous Substances) and is assigned Packing Group III.

This product may be considered a marine pollutant, and caution should be exercised to prevent contamination of waterways. Containers must be tightly sealed, clearly labeled, and protected from moisture during transport. It complies with the UN Model Regulations, IMDG Code, and IATA Dangerous Goods Regulations. Transport in bulk is not typical for this material.

15. Regulatory Information

Complies with Indian Pharmacopoeia (IP) standards. Classified as harmful if swallowed and irritating to skin and eyes. No chemical safety assessment is required for pharmaceutical-grade materials.

16. Other Information

References:

- Indian Pharmacopoeia
- OSHA Hazard Communication Standard (29 CFR 1910.1200)
- ECHA Chemical Database

Disclaimer:

The information provided in this MSDS is believed to be accurate and reliable to the best of our knowledge as of the date of issue. However, RAW PHARMA BIZ shall not be held liable for any damages resulting from handling or contact with the product.

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- **Website:** www.rawpharmabiz.com
- MSDS are based on the manufacturer's provided information.