

Safety Data Sheet (MSDS)

(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

Ferrous Sulfate Heptahydrate (FeSO₄ · 7H₂O)

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: Ferrous Sulfate Heptahydrate
- Product Number: FS-CAS7720787-202601
- Brand: SIGALD
- CAS-No.: 7720-78-7
- Synonyms: Iron(II) Sulfate; Green Vitriol; Copperas
- Chemical Family: Inorganic Ferrous Salt

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
- RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI)PILOT FREE TRADE ZONE.
- Telephone : +86-021-50350029
- Fax : +86-021-50350029

1.3 Emergency telephone

Emergency Phone # : +86-021-50350029
(CHEMTREC)

1.4 Uses & Restrictions

- Identified Uses: Water treatment (flocculant, decolorizer); agricultural fertilizer (iron supplement); industrial raw material (pigment, catalyst); wastewater treatment.
- Uses Advised Against: Pharmaceutical, food, or direct oral consumption without approval.

SECTION 2: Hazards Identification

2.1 GHS Classification: Skin irritation (Category 3); Eye irritation (Category 2); Environmental hazard (Category 1, Aquatic toxicity)2.2 GHS Label Elements

- Hazard Pictogram: (Irritation) + (Aquatic hazard)
- Signal Word: WARNING
- Hazard Statements: H316 (Causes mild skin irritation); H319 (Causes serious eye irritation); H400 (Very toxic to aquatic life)
- Precautionary Statements: P264, P280, P305+P351+P338, P391, P501

2.3 Physical/Chemical Hazards: Stable under normal conditions; oxidizes to ferric sulfate in air; dissolves in water with slight acid release.2.4 Health Hazards: Mild skin irritation; serious eye irritation; ingestion may cause gastrointestinal discomfort (nausea, diarrhea).2.5 Environmental

Hazards: Highly toxic to aquatic organisms; may cause long-term adverse effects in aquatic environments.

SECTION 3: Composition/Information on Ingredients



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

- Substance/Mixture: Pure Substance | Component | Content (w/w) | CAS-No. | Hazard Classification | | ----- | ----- | ----- | ----- | | Ferrous Sulfate Heptahydrate | $\geq 99.0\%$ | 7720-78-7 | Skin Irrit. 3; Eye Irrit. 2; Aquatic Toxicity 1 |

SECTION 4: First Aid Measures

- Inhaled: Move to fresh air; no special treatment if no discomfort; consult a doctor if coughing persists.
- Skin Contact: Rinse skin with plenty of running water for 5-10 minutes; wash contaminated clothing before reuse.
- Eye Contact: Hold eyelids open; rinse with water/normal saline for ≥ 15 minutes; seek medical attention promptly.
- Swallowed: Rinse mouth with water; do not induce vomiting; drink plenty of water to dilute; bring this MSDS to the doctor.

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Water spray, foam, carbon dioxide (CO_2), dry powder.
- Unsuitable Media: No restrictions.
- Special Hazards: Non-combustible; decomposes above 300°C releasing sulfur oxides (SO_x).
- Firefighter Advice: Wear standard fire-fighting gear; cool containers with water spray; avoid inhalation of decomposition fumes.

SECTION 6: Accidental Release Measures

- Personal Precautions: Wear nitrile gloves, safety glasses, and dust mask (FFP1) to avoid contact/inhalation.
- Environmental Precautions: Prevent runoff into sewers, rivers, or groundwater; cover spill with inert material to avoid aquatic exposure.
- Cleanup: Small spill - sweep into sealed containers for reuse or disposal; large spill - dike and transfer to corrosion-resistant tanks; neutralize with lime before disposal.

SECTION 7: Handling and Storage

- Handling: Operate in well-ventilated area; avoid dust inhalation; wash hands after handling; do not mix with oxidizing agents.
- Storage: Cool, dry, well-ventilated warehouse ($\leq 30^\circ\text{C}$); keep container tightly closed; avoid air and moisture (prevents oxidation); store separately from oxidizing agents, strong bases.
- Shelf Life: 18 months (unopened, specified conditions).

SECTION 8: Exposure Controls/Personal Protection

- PPE: Safety glasses, nitrile gloves, and dust mask for routine handling; protective clothing for large-scale operations.
- Engineering Controls: Local exhaust ventilation for dust-generating processes; basic ventilation for general handling.
- Hygiene Measures: Provide hand-washing facilities; do not eat/drink/smoke in the workplace.

SECTION 9: Physical and Chemical Properties

- Physical State: Solid (crystalline powder); Color: Light green; Odor: Odorless

- pH (1% Solution): 3.0-4.5; Melting Point: 64°C (loses crystallization water); Solubility: 29.5 g/100 mL (20°C, water)
- Density (25°C): 1.89 g/cm³; Particle Size: 80-200 mesh; Decomposition Temperature: >300°C
- Vapor Pressure (25°C): <0.1 hPa; Partition Coefficient (n-octanol/water): No data available

SECTION 10: Stability and Reactivity

- Stability: Stable under normal storage/handling; oxidizes in air to ferric sulfate.
- Incompatibilities: Oxidizing agents (e.g., KMnO₄, H₂O₂), strong bases (e.g., NaOH), carbonates.
- Hazardous Decomposition Products: SO_x, iron oxides (above 300°C).

SECTION 11: Toxicological Information

- Acute Toxicity: Oral (Rat, LD₅₀): 1520 mg/kg; Dermal (Rabbit, LD₅₀): >5000 mg/kg
- Skin/Eye Irritation: Mild skin irritation; serious eye irritation (reversible with treatment).
- Carcinogenicity: Not classified as carcinogenic by IARC, EPA, or NTP.

SECTION 12: Ecological Information

- Fish (Zebrafish, LC₅₀): 15 mg/L (96-hour exposure)
- Daphnia (EC₅₀): 5 mg/L (48-hour exposure)
- Biodegradability: Non-biodegradable; toxic to aquatic organisms at low concentrations.

SECTION 13: Disposal Considerations

- Product Waste: Classified as hazardous waste (aquatic toxicity); neutralize with lime to pH 6-9; dispose via licensed hazardous waste treatment facilities.
- Packaging Waste: Rinse thoroughly with water; dispose as hazardous waste or recycle if permitted.

SECTION 14: Transport Information

- UN Number: ADR/RID: UN 3077; IMDG: UN 3077; IATA-DGR: UN 3077
- UN Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Ferrous Sulfate)
- Transport Class: 9; Packaging Group: III; Environmental Hazards: Yes (Marine Pollutant)
- Special Precautions: Transport in sealed containers; avoid moisture and physical damage; do not transport with foodstuffs.

SECTION 15: Regulatory Information

- National Regulations (China): Complies with Hazardous Chemical Safety Management Regulation; meets GB/T 10531-2016.
- International Regulations: GHS Rev.9 (Irritation 2/3, Aquatic Toxicity 1); REACH (EU, not in SVHC List); TSCA (US, listed).

SECTION 16: Other Information

- Revision Date: 10 JAN 2026
- Disclaimer: Based on current scientific knowledge; supplier not liable for damage caused by improper use.