



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>

Safety Data Sheet (MSDS)

- **Feed Grade Ferrous Sulfate Monohydrate**(Compliant with GB/T 16483, GHS Rev.9, IMDG, IATA)**Revision Date: 24 FEB 2026**

SECTION 1: Identification

1.1 Product Identifiers

- Name: Ferrous Sulfate Monohydrate (Feed Grade)
- CAS: 13463-43-9
- Synonyms: Iron(II) Sulfate Monohydrate; Green Vitriol Monohydrate
- EINECS: 231-753-5

1.2 Supplier Details

- Company: NEWAY SINOPHC TECH. LIMITED
- Address: RM. 204, BLDG 3, 188 Aona Rd, Shanghai FTZ, China
- Tel: +86-021-50350029 | Fax: +86-021-50350029

1.3 Emergency Contact: +86-021-50350029 (24h)

1.4 Uses: **Exclusive for animal feed additive.** Essential trace mineral supplement providing bioavailable iron (Fe^{2+}) for livestock, poultry and aquaculture. Prevents iron deficiency anemia and improves growth performance. Not for human food, pharmaceutical or industrial use.

SECTION 2: Hazards Identification

- **GHS Classification:** Skin irritation (Category 2); Eye irritation (Category 2); Specific target organ toxicity - single exposure (Gastrointestinal tract, Category 3)
- **Pictogram:** (Exclamation Mark)
- **Signal Word:** Warning
- **Hazard Statements:**
 - H315: Causes skin irritation
 - H319: Causes serious eye irritation
 - H335: May cause respiratory irritation
- **Precautionary Statements:**
 - P264: Wash hands thoroughly after handling
 - P280: Wear protective gloves/eye protection
 - P302+P352: If on skin: Wash with plenty of soap and water
 - P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Summary: Non-flammable pale green crystalline powder. Mildly acidic; causes skin and eye irritation upon direct contact. Fe^{2+} is the bioavailable iron form for animals; non-toxic at recommended dietary levels, essential trace element.

SECTION 3: Composition/Information on Ingredients

- **Pure Substance:** Ferrous Sulfate Monohydrate (CAS 13463-43-9)



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- **Concentration:** ≥98.0% (Feed Grade)
- **Impurities:** Trace amounts of chloride, sulfate and heavy metals (compliant with feed hygiene standards)
- **Hazardous Components:** None (at feed grade concentrations)

SECTION 4: First Aid Measures

- **Inhalation:** Remove the victim to fresh air and keep at rest. If coughing or respiratory irritation persists, seek medical advice.
- **Skin Contact:** Immediately flush contaminated skin with plenty of running water for 10-15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse; if skin irritation develops, seek medical attention.
- **Eye Contact:** Hold eyelids open and rinse continuously with clean running water for at least 15 minutes. Remove contact lenses if worn. If eye redness, pain or blurred vision persists, consult an ophthalmologist immediately.
- **Ingestion (Human):** Rinse mouth thoroughly with water. Drink a large amount of water or milk to dilute. Do not induce vomiting. Seek medical attention if gastrointestinal discomfort (nausea, abdominal pain, diarrhea) occurs.
- **Antidote:** No specific antidote. Treat symptomatically.

SECTION 5: Firefighting Measures

- **Extinguishing Media:** Water spray, carbon dioxide (CO₂), dry chemical powder, foam. All common agents are suitable.
- **Hazards in Fire:** Non-combustible. Decomposes at high temperatures (>500°C) to produce toxic sulfur oxides (SO_x) and iron oxide fumes. No explosion risk.
- **Firefighter Advice:** Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear if exposed to high-temperature decomposition fumes. Cool surrounding containers with water spray to prevent thermal expansion. Avoid inhaling combustion dust/fumes.

SECTION 6: Accidental Release Measures

- **Personal Precautions:** Wear N95 dust mask, nitrile gloves and chemical splash goggles. Ensure good ventilation in the spill area. Avoid creating dust clouds.
- **Cleanup Methods:**
 - Small Spill: Sweep into a sealed HDPE container for reuse or disposal. Wipe the area with a damp cloth to prevent dust dispersion and discoloration of surfaces.
 - Large Spill: Collect with a dust-free vacuum cleaner into sealed HDPE drums. Avoid contact with water to prevent acidic solution formation and metal surface corrosion.
- **Environmental Precautions:** Prevent spilled material from entering drains, sewers or water bodies. Iron is toxic to aquatic life at high concentrations; contain and recover spills immediately. Neutralize small residual spills with mild alkaline material (e.g., sodium bicarbonate) if needed.



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SECTION 7: Handling and Storage

- **Handling Precautions:** Operate in a well-ventilated area with local dust extraction. Avoid generating dust during weighing and mixing. Wash hands thoroughly with soap and water after handling. Do not mix with strong oxidizers or alkaline feed ingredients directly.
- **Storage Conditions:**
 - Temperature: $\leq 25^{\circ}\text{C}$; Relative Humidity: $\leq 60\%$
 - Package: Keep tightly sealed in original moisture-proof PP woven bags or HDPE drums with inner PE liners (prevents oxidation of Fe^{2+} to Fe^{3+} and caking).
 - Shelf Life: **36 months (unopened, under specified conditions)**
 - Incompatibilities: Strong oxidizing agents, strong bases, alkaline minerals (e.g., calcium carbonate), air (prolonged exposure causes oxidation)
 - Segregation: Store separately from strong oxidizers, alkaline feed additives and non-feed grade chemicals. Mark "FEED GRADE" clearly.

SECTION 8: Exposure Controls/Personal Protection

- **Occupational Exposure Limit (OEL):** Fe: $5 \text{ mg}/\text{m}^3$ (TWA, respirable fraction)
- **Engineering Controls:** Local exhaust ventilation systems in bulk handling areas to control dust concentration below the limit value. Use closed mixing systems to minimize dust release.
- **Personal Protective Equipment (PPE):**
 - Respiratory: N95 dust mask (for bulk handling/loading/unloading)
 - Eyes: Chemical splash goggles (mandatory for all operations)
 - Skin: Nitrile rubber gloves and protective clothing (mandatory to prevent skin irritation and discoloration)
 - Other: Wear dust-proof shoes to prevent surface contamination.

SECTION 9: Physical and Chemical Properties

- **Physical State:** Pale green crystalline powder | **Odor:** Odorless
- **Melting Point:** Decomposes $>500^{\circ}\text{C}$ (loses water first at $\sim 150^{\circ}\text{C}$) | **Boiling Point:** N/A (decomposes)
- **Solubility:** Soluble in water ($28.8 \text{ g}/100 \text{ mL}$ at 25°C); slightly soluble in ethanol; insoluble in ether
- **Bulk Density:** $1.80\text{-}1.90 \text{ g}/\text{cm}^3$ | **Flash Point:** Not applicable (non-combustible)
- **Vapor Pressure:** $<0.0001 \text{ kPa}$ (25°C) | **pH Value:** 3.0-4.0 (5% aqueous solution)
- **Color:** Pale green | **Hygroscopy:** Slightly hygroscopic | **Oxidizability:** Fe^{2+} oxidizes to Fe^{3+} in air/moisture

SECTION 10: Stability and Reactivity

- **Stability:** Stable under sealed, dry and cool storage conditions. Fe^{2+} is prone to oxidation to inactive Fe^{3+} when exposed to air, moisture or high temperature.
- **Hazardous Reactions:** Reacts with strong oxidizing agents to produce Fe^{3+} and toxic sulfur oxides; reacts with strong bases to form insoluble iron(II) hydroxide precipitate.
- **Hazardous Polymerization:** Will not occur.

- **Decomposition Products:** Sulfur dioxide (SO₂), sulfur trioxide (SO₃), iron(II) oxide (FeO), iron(III) oxide (Fe₂O₃) (high-temperature decomposition).
- **Conditions to Avoid:** Air exposure, moisture, high temperature, strong oxidizers, strong bases.

SECTION 11: Toxicological Information

- **Acute Toxicity:** Oral (Rat) LD₅₀ = 1,520 mg/kg (Moderate toxicity); Dermal (Rabbit) LD₅₀ >5,000 mg/kg
- **Skin Irritation:** Causes mild skin irritation (Category 2) due to acidic nature and iron ion contact
- **Eye Irritation:** Causes serious eye irritation (Category 2)
- **Respiratory Irritation:** May cause mild respiratory irritation from dust inhalation
- **Carcinogenicity:** IARC Classification - Group 3 (not classifiable as to carcinogenicity to humans); iron is an essential trace element.
- **Animal Safety:** Essential iron source for hemoglobin and myoglobin synthesis. Safe at recommended dietary inclusion levels (50-200 ppm Fe²⁺). Deficiency causes anemia, poor growth and reduced immunity; excess may cause iron poisoning in young animals.

SECTION 12: Ecological Information

- **Aquatic Toxicity:** LC₅₀ (Zebrafish, 96h) = 32 mg/L (Toxic to aquatic life at high concentrations)
- **Biodegradability:** Not applicable (inorganic salt)
- **Bioaccumulation Potential:** Low (iron is an essential micronutrient for aquatic organisms, no bioaccumulation)
- **Mobility in Soil:** Moderate; binds to soil organic matter and clay particles
- **Environmental Impact:** At recommended feed levels, excretion in manure is safe and can improve soil iron content for plant growth. Large spills into water bodies cause acute toxicity to fish and invertebrates; may cause water discoloration and oxygen depletion.

SECTION 13: Disposal Considerations

- **Product Waste:** Expired or oxidized ferrous sulfate is non-hazardous waste. It can be used as a micronutrient fertilizer for iron-deficient soils or disposed of as general solid waste in accordance with local regulations. Do not reuse oxidized material (Fe³⁺) in feed (low bioavailability).
- **Packaging Waste:** Rinse packaging thoroughly with water, then recycle or dispose of as non-hazardous waste. Neutralize rinse water with mild alkali if needed before discharge.
- **Disposal Compliance:** Comply with China General Solid Waste Pollution Control Law and local environmental regulations for solid waste and wastewater discharge.

SECTION 14: Transport Information

- **UN Number:** None (Non-hazardous goods for transport)
- **UN Proper Shipping Name:** Ferrous Sulfate Monohydrate (Feed Additive), Not Dangerous Goods
- **Hazard Class:** None | **Packaging Group:** None | **Environmental Hazard:** No



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- **Transport Precautions:** Transport in covered, dry ordinary cargo vehicles. Prevent moisture absorption, package damage, dust dispersion and prolonged air exposure (to avoid oxidation). Avoid mixing with strong oxidizers, alkaline chemicals and metal surfaces during transport. Protect packages from rain, snow and high temperature.

SECTION 15: Regulatory Information

- **China:** Compliant with GB 13078.1-2017 (Feed Hygiene Standard) and GB/T 21695-2008 (Feed Additive Ferrous Sulfate). Listed in the National Catalogue of Feed Additives.
- **EU:** Compliant with EC 1831/2003 (Feed Additives), REACH registered (not in SVHC List). Approved as a trace mineral feed additive for all livestock/poultry.
- **US:** TSCA listed, approved by FDA/CVM for use in animal feed (21 CFR Part 573). Meets NRC iron requirement standards for animals.
- **International:** Meets Codex Alimentarius Commission standards for trace mineral feed additives. Complies with OIE animal feed safety standards.

SECTION 16: Other Information

- **Disclaimer:** This MSDS is for feed grade ferrous sulfate monohydrate only. Misuse for non-feed purposes (e.g., human consumption, industrial use) is at the user's sole risk. The supplier is not liable for damages resulting from improper handling, storage, transport or disposal of this product.
- **Revision Date:** 24 FEB 2026

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