

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: Ferrous Sulfate, Heptahydrate

Product Code(s): F1020

Synonyms: Iron(II) Sulfate, Heptahydrate

Recommended Use: For manufacturing, industrial, and laboratory use only.

Uses Advised Against: Not for food, drug, or household use.

Supplier: Rocky Mountain Reagents, Inc.
4621 Technology Drive, Golden, CO 80403
Phone: (303) 762-0800 Fax: (303) 762-1240

Emergency Phone Number: (800) 255-3924 (CHEM-TEL)

2. HAZARDS IDENTIFICATION

Hazard Classifications: Acute Toxicity – Oral: Category 4
Skin Corrosion/Irritation: Category 2
Eye Damage/Irritation: Category 2

Signal Word: WARNING

Hazard Statements: Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

Pictograms:



Precautionary Statements:

Prevention: Wash thoroughly after handling.
Do not eat, drink, or smoke when using this product.
Wear protective gloves, protective clothing, eye protection, and face protection.

Response: If swallowed: Call a poison center or doctor if you feel unwell. Rinse mouth.
If on skin (or hair): Wash with plenty of water. If skin irritation occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: Store in a well-ventilated place. Keep container tightly closed.

Disposal: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Hazards Not Otherwise Classified: Toxic to aquatic life. Avoid release to the environment.

Toxicity Statement: Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Ferrous Sulfate, Heptahydrate	Iron(II) Sulfate, Heptahydrate	7782-63-0	FeSO ₄ • 7H ₂ O	≥ 99.0%

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediately call a poison center or doctor.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Rinse mouth. Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor.

Skin Contact: Wash skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a doctor if symptoms persist.

Eye Contact: Check for and remove contact lenses. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Immediately call a doctor.

General Advice: Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that medical personnel and those providing first aid are aware of the material(s) involved and take precautions to protect themselves.

Symptoms and Effects: Ingestion may cause abdominal pain, nausea, vomiting, and diarrhea. Contact with skin may cause redness and pain. Contact with eyes may cause stinging, tearing, redness, swelling, and blurred vision.

**Immediate Medical Care/
Special Treatment:** If you feel unwell or are concerned, get medical attention immediately. Treat symptomatically. Keep victim warm and under observation. Symptoms may be delayed.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Water spray, dry powder, alcohol resistant foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a solid (straight) water stream, as it may scatter and spread fire.

Hazardous Combustion Products:	Sulfur oxides, iron oxides.
Specific Hazards:	No information found.
Special Protective Equipment/Precautions for Firefighters:	As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear. Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment:	Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. Keep out of low areas. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, and clothing.
Emergency Procedures:	In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).
Methods for Containment:	This product is miscible in water. Stop the flow of material if this is without risk. Avoid dust formation. Prevent entry into waterways, sewer, basements, or confined areas. Product should not be released to the environment.
Methods for Cleanup:	Sweep up or vacuum up spillage and collect in suitable container for disposal. Small dry spills: With a clean shovel, place material into a clean, dry container and cover loosely; move containers from spill area. Following product recovery, flush area with water. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling:	Wear personal protective equipment (see Section 8). Use only in well-ventilated areas. Provide sufficient air exchange and/or exhaust in work areas. Avoid contact with skin, eyes, and clothing. Do not ingest. When using, do not eat, drink, or smoke. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Avoid release to the environment. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.
Storage:	Store in a cool, dry, ventilated area. Store in a segregated and approved area away from incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:	Ferrous Sulfate, Heptahydrate:	ACGIH (TLV):	1 mg/m ³
		NIOSH (TWA):	1 mg/m ³
Engineering Controls:	Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.		

Personal Protective Measures:

- Eye/Face Protection:** Wear safety glasses with side shields or safety goggles. Wear a face shield. Maintain approved eye wash station and accessible rinse facilities in work area.
- Skin Protection:** Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.
- Respiratory Protection:** An air-purifying, NIOSH-approved respirator with appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

Specific Requirements for Personal Protective Equipment: Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance:	Crystalline, blue-green solid.
Odor:	Odorless.
Odor Threshold:	No information found.
Formula Weight:	278.02.
pH:	No information found.
Melting/Freezing Point:	57 °C.
Boiling Point/Range:	No information found.
Decomposition Temperature:	> 300 °C.
Flash Point:	Not applicable.
Auto-ignition Temperature:	Not applicable.
Flammability:	Not applicable.
Flammability/Explosive Limits:	Not applicable.
Solubility:	Miscible with water: 486 g/L at 50 °C.
Vapor Pressure:	No information found.
Vapor Density:	Not applicable.
Specific Gravity:	1.90 (Water = 1)
Evaporation Rate:	No information found.
Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	No information found.

10. STABILITY AND REACTIVITY

- Reactivity Data:** Stable and non-reactive under normal conditions.
- Chemical Stability:** Mildly reducing, will oxidize slowly in air.

Conditions to Avoid:	Contact with incompatible materials. Loses water in dry air.
Incompatible Materials:	Strong oxidizing agents.
Hazardous Decomposition Products:	Sulfur oxides, iron oxides.
Possibility of Hazardous Reactions:	May react vigorously, violently, or explosively if exposed to extreme thermal conditions or to the incompatible materials listed above.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.														
Acute Effects:	Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause burns to the eyes, skin, respiratory tract, and gastrointestinal tract. May affect the central nervous system, respiratory system, brain, blood, gastrointestinal system, and cardiovascular system.														
Chronic Effects:	Prolonged inhalation may be harmful.														
Toxicological Data:	<table> <tr> <td>LD₅₀ Oral, Rat:</td> <td>584 mg/kg (estimated)</td> </tr> <tr> <td>LD₅₀ Oral, Mouse:</td> <td>1520 mg/kg</td> </tr> <tr> <td>LD₅₀ Intraperitoneal, Mouse:</td> <td>245 mg/kg</td> </tr> <tr> <td>LD₅₀ Intravenous, Mouse:</td> <td>51 mg/kg</td> </tr> <tr> <td>LD₅₀ Oral, Rabbit:</td> <td>2778 mg/kg</td> </tr> <tr> <td>LD₅₀ Subcutaneous, Rabbit:</td> <td>279 mg/kg</td> </tr> <tr> <td>LD₅₀ Intravenous, Rabbit:</td> <td>99 mg/kg</td> </tr> </table>	LD ₅₀ Oral, Rat:	584 mg/kg (estimated)	LD ₅₀ Oral, Mouse:	1520 mg/kg	LD ₅₀ Intraperitoneal, Mouse:	245 mg/kg	LD ₅₀ Intravenous, Mouse:	51 mg/kg	LD ₅₀ Oral, Rabbit:	2778 mg/kg	LD ₅₀ Subcutaneous, Rabbit:	279 mg/kg	LD ₅₀ Intravenous, Rabbit:	99 mg/kg
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Symptoms of Exposure:	Skin irritation, redness, and itchiness. Eye irritation, redness, watering, blurred vision, and itchiness. Respiratory irritation, coughing, wheezing. May cause abdominal pain, 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, and kidneys (pink urine discoloration).														
Carcinogenic Effects:	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.														

12. ECOLOGICAL INFORMATION

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LC ₅₀ , Guppy (<i>Poecilia reticulata</i>):	925 mg/L, 96 h static						
Persistence and Degradability:	No information found.						
Environmental Effects:	Toxic to aquatic life. Avoid release to the environment.						

13. DISPOSAL INFORMATION

Disposal Instructions:	All wastes must be handled in accordance with local, state, and federal regulations. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers.
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Contaminated Packaging: Because emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

Waste Codes: No information found.

14. TRANSPORT INFORMATION

DOT:

UN Number: UN3077

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Ferrous sulfate heptahydrate)

Hazard Class: 9

Packing Group: III

ERG Number: 171

Environmental Hazard Regulations: No information found.

Other Transport Precautions: No information found.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: All components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: No information found.

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	Yes
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

Section 313: No information found.

CERCLA Reportable Quantities: 1000 lb

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed components of this product comply with the inventory requirements administered by the governing country or region.

16. OTHER INFORMATION**Disclaimer:**

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Issue Date:

August 10, 2023

Reason for Revision:

Not applicable.