

AERCHEM INC.
320 North Walnut
Bloomington, IN 47404

Telephone: 812.334.9996 Fax: 812.334.1960 Emergency: 800.424.9300

Effective Date: 6/21/95
Product Name: **Ferrous Sulfate Heptahydrate**
Synonyms: copperas, iron sulfate, green vitriol
Chemical Family: inorganic salt
Chemical Formula: $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
Molecular Weight: 278.01
CAS No.: 7782-63-0
NFPA Ratings (scale 0-4): Health=2 Fire=0 Reactivity=0

Components and Contaminants:

Component:	Ferrous sulfate heptahydrate, 100%
Exposure limits:	
Iron salts, soluble, as Fe	1 mg/m ³ ACGIH TWA

Physical Data:

Description:	hygroscopic, blue green crystals, monoclinic, effluoresces in dry air, becomes yellow brown when stored for extended time periods, forming a layer of ferric sulfate.
Solubility:	48.6g / 100g water at 20°C
Melting point:	Loses water at 149°F
Boiling point:	Decomposes >572°F
Bulk density:	55 lbs / cubic ft.
pH (5% solution):	3-5

Fire and Explosion Information:

Fire and Explosion Hazard:	Negligible fire hazard when exposed to heat or flame.
Firefighting Media:	Dry chemical, carbon dioxide, water spray or foam
Firefighting:	Move container from fire area if possible. Do not scatter spilled material with high pressure water. Use agents appropriate to surrounding fire.

Reactivity Data: Stable under normal temperatures and pressures.

Incompatibilities:	Alkalis
Arsenic trioxide and sodium nitrate:	Spontaneously combustible mixture.
Methyl isocyanacetate:	May decompose explosively at 25°C
Decomposition:	Thermal decomposition products may include toxic sulfur oxides.
Polymerization:	Does not occur

Storage and Disposal Information:

Obey all federal, state, and local regulations when storing or disposing of ferrous sulfate heptahydrate. Always store away from incompatible substances.
Conditions to avoid: Dispersion of dust in air

Leak and Spill Information:

Contain soil spill or liquid spills, and neutralize with lime or sodium carbonate if necessary. Place into suitable container for later disposal.
Reportable Quantity: 1000 pounds

If the release of this substance is reportable under CERCLA section 103, the National Response Center must be notified immediately at 800-424-8802.

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Protective Equipment:

Respirator: Specific respirators selected must be based on levels of the substance in the workplace. They must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and The Mine Safety and Health Administration.

Clothing: Clean body covering clothing recommended.

Gloves: Rubber gloves or other appropriate protective gloves

Eye protection: Dust resistant safety goggles recommended. Eye wash station.

Health Effects and First Aid:

General: Local effects Corrosive-eye, ingestion. Skin irritant, mucous membranes.
Acute toxicity level moderately toxic by ingestion (heptahydrate)
Organs affected poisoning may affect liver, kidneys, circulatory, cardiovascular, and central nervous systems

Additional Interactions with medicines may cause adverse effects
LD50 oral-mouse 1520 mg.kg

Inhalation:

Acute exposure: May cause irritation of the respiratory tract.
Chronic exposure: No information available.

First Aid:

Remove from exposure area to fresh air. If breathing has stopped, perform artificial respiration. Consult a physician.

Skin Contact:

Acute exposure: May cause irritation
Chronic exposure: Repeated exposure to irritants may cause dermatitis.

First Aid:

Remove contaminated clothing and shoes immediately. Wash affected area with soap and water.

Eye contact:

Corrosive
Acute Exposure: Contact with eyes may cause severe irritation and corrosive action due to acidity.
Chronic exposure: Effects depend on concentration and duration of exposure. Prolonged contact with corrosives may result in conjunctivitis.

Ingestion:

Acute exposure: Side effects of ingestion of iron salts may include heartburn, nausea, gastric discomfort, constipation, or diarrhea. Symptoms of severe poisoning may occur within 30 minutes or be delayed for several hours. Severe hemorrhagic gastritis with abdominal pain, retching, violent diarrhea and vomiting may occur. Circulatory system may be affected with symptoms of shock, rapid, weak or no pulse, severe hypotension and pulmonary changes with dyspnea, and emphysema may occur. The average lethal dose of iron is about 200 to 250 mg per kg of body weight.
Chronic exposure: Reproductive effects have been reported in animals.

First Aid:

In patients not in shock or coma, induce emesis with syrup of ipecac if vomiting has not occurred. Follow with gastric lavage using deferoxamine, 2 grams in 1 liter of water which contains sodium bicarbonate 20g/L. Leave 10 grams of deferoxamine in 50 ml of 5% sodium bicarbonate in the stomach. Maintain airway, blood pressure and respiration. Treat symptomatically and supportively. (Dreisbach, Handbook of Poisoning, 11th edition.) Get medical attention. Treatment should be administered by qualified medical personnel. The decision whether the severity of poisoning requires administering of any antidotes and actual dose required should be made by qualified medical personnel.
