



**MATERIAL SAFETY DATA SHEET**  
**Ferrous Sulfate**  
**HEPTAHYDRATE - MONOHYDRATE**

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	E

Manufacturer Information	
Product/Material:	Ferrous Sulfate Moist & Dried Heptahydrate & Monohydrate
Manufacturer's Name & Address:	QC Corporation 5566 Nash Road Cape Girardeau, MO 63701
Emergency Tel. No.:	410-486-0010
Chemtrec Number:	800-424-9300
Date Prepared:	November 1, 2013
Prepared By:	Jason Gordon

Section I - Product Identification	
Trade Name:	Ferrous Sulfate: Moist Heptahydrate, Dried Heptahydrate, Monohydrate
Synonym:	Copperas, Iron (II) Sulfate
Chemical Family:	Iron (II) Sulfate
Formula:	FeSO <sub>4</sub> · 7H <sub>2</sub> O - Heptahydrate FeSO <sub>4</sub> · 1H <sub>2</sub> O - Monohydrate
CAS:	7720-78-7 - Ferrous Sulfate 7782-63-0 - Heptahydrate 17375-41-6 - Monohydrate
HMIS:	H1 FO RO, Personal Protection Code-E (Safety glasses, gloves)
*DOT Category (only for packages containing 1,000 lbs. or more):	Other regulated substances, solid, N.O.S., 9, NA 3077, III, RQ (Ferrous Sulfate)  *Per 49CFR 172.504 (f) (9), Class 9 placards are not required for domestic (USA ground) transportation, however shipments with packaging or bulk in excess of 1,000 lbs. each, will require a marking on a white square of 3077. Shipments with markings DO NOT require a driver CDL with hazardous endorsements.

Section II - Hazardous Ingredients	
Ferrous Sulfate:	FeSO <sub>4</sub> · H <sub>2</sub> O
OSHA PEL:	N.A.
ACGIH TLV (1979):	Rat. Oral LD50: 1480 mg/m <sup>3</sup>
Other Limits:	None

Section III - Physical Data	
Boiling Point:	Decomposition at 300° C.
Vapor Pressure (mm Hg):	0
Vapor Density:	N.A.
Solubility in Water (20°C):	Heptahydrate: 48.50 gms in 100 ml Monohydrate: 29.65 gms in 100 ml
Appearance & Odor:	Heptahydrate: Blue-green, acidic/sour Monohydrate: Gray, acidic/sour
Specific Gravity:	Heptahydrate: 1.898 @ 25°C Monohydrate: 2.970 @ 25°C

Section IV - Fire and Explosion Hazard Data	
Flash Point:	None
Flammable Limits:	NAN.
LELA and UEL:	N.A.
Extinguishing Media:	N.A.
Special Firefighting Procedures:	N.A.
Unusual Fire & Explosion Hazards:	None

Section V - Reactivity Data	
Stability:	Stable
Incompatibility:	Oxidizing Agents and Alkalies.
Conditions to Avoid:	Extremely high temperatures.
Hazardous Decomposition or By-products:	Products of sulfur oxides, i.e. SO <sub>2</sub> & SO <sub>3</sub>
Hazardous Polymerization:	Will Not Occur

Section VI - Health Hazard Data	
Route(s) of Entry:	Inhalation (Yes); Skin (Yes), Ingestion (Yes); Eyes (Yes)
Inhalation:	Irritation to respiratory system.
Skin:	Mild irritant.
Eyes:	Will cause painful irritation.
Ingestion:	Ingestion of large quantities can produce GI tract disturbances, severe shock, vomiting, liver damage, tachycardia and death.
Carcinogenicity:	Not established.
Medical Conditions Generally Aggravated by Exposure:	Dermatitis, asthma, conjunctivitis, stomach or digestive problems.
Signs and Symptoms of Exposure:	Irritation or itching, stinging of eyes, breathing problems, stomach ache, acid or sour taste.
Emergency and First-Aid Procedures:	Flood skin and eyes with water for 15 minutes, consult physician. If inhaled, remove to fresh air, consult physician. If ingested, drink large amounts of water, induce vomiting, consult physician.

Section VII - Precautions for Safe Handling and Use	
Steps to be Taken in Case Material is Released or Spilled:	Sweep up and repackage or place in receptacle for future disposal.
Waste Disposal Method:	Remove to properly designated landfill or, if in solution, precipitate with alkali and filter off iron for removal to landfill with pH adjustments of the filtrate and discharge to sewer.
Precautions to be taken in Handling and Storage:	Wear gloves, safety goggles, breathing mask and coveralls when handling. Stored materials should be placed in a dry and reasonably temperatured area, preferably below 120°F.
Other Precautions:	None

Section VIII - Control Measures	
Respiratory Protection:	Dusk mask
Protective Gloves:	Work gloves
Eye Protection:	Safety goggles
Clothing:	Coveralls
Ventilation:	Local exhaust-none required. Special - None Mechanical - None Other - None
Work/Hygienic Practices:	Available safety showers as well as end of shift clean-up facilities.