



Health	1
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet

Ferrous ammonium sulfate hexahydrate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ferrous ammonium sulfate hexahydrate
Catalog Codes: SLF1990
CAS#: 7783-85-9 (Hexahydrate); 10045-89-3 (anhydrous)
RTECS: BR6500000
TSCA: TSCA 8(b) inventory: No products were found. Ferrous Ammonium Sulfate hexahydrate is not TSCA listed because it is a hydrate.
CI#: Not applicable.
Synonym: Ammonium ferrous sulfate, hexahydrate; Iron ammonium sulfate hydrate; Sulfuric acid, ammonium iron (2+) salt, hexahydrate
Chemical Name: Ammonium iron (II) sulfate, hexahydrate (2:1:2:6)
Chemical Formula: FeSO₄(NH₄)₂SO₄·6H₂O

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CHEMTREC (24HR Emergency Telephone), call:
 1-800-424-9300
International CHEMTREC, call: 1-703-527-3887
For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Ferrous ammonium sulfate hexahydrate	7783-85-9	100
	(Hexahydrate);	
	10045-89-3	
	(anhydrous)	

Toxicological Data on Ingredients: Ferrous ammonium sulfate hexahydrate: ORAL (LD50): Acute: 3250 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to liver, spleen. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact:

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary

system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 1 (mg(Fe)/m) [Norway] TWA: 1 (mg(Fe)/m) [United Kingdom (UK)] TWA: 1 (mg(Fe)/m) from ACGIH (TLV) [United States] TWA: 1 (mg(Fe)/m) from NIOSH [United States] TWA: 1 (mg(Fe)/m) from OSHA (PEL) [United States]3 Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance:

Solid. (Crystals solid. Deliquescent crystals solid. Efflorescent crystals solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 392.14 g/mole

Color: Green. Blue-green (Light.)

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: Decomposition temperature: 100°C (212°F) - 110 C.

Critical Temperature: Not available.

Specific Gravity: 1.864 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:

Soluble in cold water, hot water. Solubility in Water: 26.9 g/100 ml water @ 20 deg. C; 73 g/100 ml water @ 80 deg. C.
Insoluble in Ethanol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, light, air

Incompatibility with various substances: Reactive with oxidizing agents, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Air and light sensitive. Slowly oxidizes in air

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 3250 mg/kg [Rat].

Chronic Effects on Humans: May cause damage to the following organs: liver, spleen.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes skin irritation. Eyes: Causes transient eye irritation and inflammation. Inhalation: Causes respiratory tract irritation. Symptoms may include coughing, wheezing, shortness of breath. May cause pulmonary edema. Ingestion: Causes irritation to the gastrointestinal tract. Symptoms may include stomach/abdominal pain, nausea, lack of appetite, vomiting/vomiting brown or bloody stomach contents, diarrhea, black stool. Other symptoms may include pallor or cyanosis, central nervous system effects (CNS depression, lethargy, restlessness, confusion, lassitude, drowsiness), hyperventilation due to metabolic acidosis, hyperglycemia or hypoglycemia, hypotension, and cardiovascular collapse. May cause kidney damage. Pink urine is a strong indicator of iron poisoning. May also cause liver damage (hepatonecrosis, hepatotoxicity, hepatic failure). Although rare, acute iron poisoning may also cause Early Coagulopathy. This is a blood coagulation disorder which is associated with severe hepatotoxicity. Acute or serious poisoning from iron or iron salts is rare in adults. Chronic Potential Health Effects: Chronic (Repeated or prolonged) ingestion of iron or iron salts results in increased accumulation of iron in the body, particularly the liver, spleen, and lymphatic system. It may cause Liver damage (Hemosiderosis in the liver), and rarely Hemochromatosis in the Kupffer cells of the liver. Chronic iron poisoning may also cause leukocytosis and anemia. Eyes: Prolonged eye contact may cause conjunctivitis, and a brownish discoloration of the eye lens.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: RQ: 1000 lbs. (Listed as Ferrous Ammonium Sulfate (anhydrous CAS no. 10045-89-3)

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut carcinogen reporting list.: Ferrous ammonium sulfate (CAS number 10045-89-3) Illinois chemical safety act: Ferrous ammonium sulfate anhydrous (CAS number 10045-89-3) New York release reporting list: Ferrous ammonium sulfate (CAS number 10045-89-3) Massachusetts RTK: Ferrous ammonium sulfate (CAS number 10045-89-3) Massachusetts spill list: Ferrous ammonium sulfate (CAS number 10045-89-3) New Jersey: Ferrous ammonium sulfate (CAS number 10045-89-3) New Jersey spill list: Ferrous ammonium sulfate (CAS number 10045-89-3) Louisiana spill reporting: Ferrous ammonium sulfate (CAS number 10045-89-3) California Director's list of Hazardous Substances: Ferrous ammonium sulfate (CAS number 10045-89-3) CERCLA: Hazardous substances.: Ferrous ammonium sulfate (CAS number 10045-89-3): 1000 lbs. (453.6 kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). Ferrous Ammonium Sulfate hexahydrate is not on the Canadian DSL or the European EINES inventory

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

This product is not classified according to the EU regulations. Not applicable.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:33 PM

Last Updated: 06/09/2012 12:00 PM

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