

**MATERIAL SAFETY DATA SHEET  
FOR  
THORN SMITH LABORATORIES  
STUDENT REFERENCE STANDARDS AND REAGENT CHEMICALS**

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Ferrous Ammonium Sulfate  
Catalog Number 81-1035

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Manufacturer: Auric Enterprises, Inc.  
d/b/a Thorn Smith Laboratories  
Address: 7755 Narrow Gauge Road  
Beulah, MI 49617  
Phone Number: 231-882-4672  
MSDS Number: TSL-104  
Date Prepared: October 2, 1989  
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**SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION**

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COMPONENTS - Chemical Name & Common Names  
(Hazardous Components 1% or greater; Carcinogens 0.1% or greater)

Ferrous Ammonium Sulfate Hexahydrate

Common Synonyms: Mohr's Salt

Chemical Family: Inorganic Salt

Formula:  $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$

CAS No.: 7783-85-9

OSHA PEL: According to our sources, exposure threshold levels have not been established.  
(N/E).

ACGIH TLV: 1 mg (Fe)/cu<sup>o</sup>m

OTHER LIMITS: N/A

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**SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS**

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Boiling Point: Decomposes at 100-110° C

Specific Gravity (H<sub>2</sub>O=1) 1.864 ( )

Vapor Pressure (mm Hg and Temperature): N/A

Melting Point: 100° C (212° F)

Vapor Density (Air-1): N/A

Evaporation Rate (-1): N/A

Solubility in water: Appreciable (More than 10%) 21 @ 20° C

Water Reactive: No

Appearance and Odor: Pale blue-green crystals or crystalline powder; odorless

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### SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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Flash Point and Method Used: Not Flammable.

Auto-Ignition Temperature: N/A

Flammability Limits in Air (% by Volume): N/A

LEL: N/A UEL: N/A

Extinguisher Media: Water Spray or water flooding.

Special Fire Fighting Procedures: Move container from fire area if possible. Do not scatter spilled material with high pressure water streams. Dike fire control water for later disposal. Use agents suitable for type of fire. Avoid breathing hazardous vapors or dusts, keep upwind. Where NIOSh approved protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode.

Unusual Fire and Explosion Hazards: Toxic gases produced: sulfur trioxide, corrosive fumes of ammonia, and toxic oxides of nitrogen. Negligible fire hazard when exposed to heat or flame.

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### SECTION 4 - REACTIVITY HAZARD DATA

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STABILITY:  Stable  Unstable

Conditions to Avoid: Moisture. Stable under normal temperatures and pressures. Slowly oxidizes and effloresces in air. May burn but does not readily ignite.

Incompatibility (Materials to Avoid): Strong oxidizers, chlorates, nitrates, nitrites.

Hazardous Decomposition Products: Thermal decomposition may release oxides of sulfur (sulfur trioxide), corrosive fumes of ammonia, and toxic oxides of nitrogen.

HAZARDOUS POLYMERIZATION:  May Occur  Will Not Occur

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### SECTION 5 - HEALTH HAZARD DATA

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PRIMARY ROUTES OF ENTRY:

Inhalation  Ingestion  Skin Contact  Eye Contact  Not Hazardous

CARCINOGEN LISTED IN:

NTP  OSHA  IARC Monograph  Not Listed

TOXICITY: Ferrous Ammonium Sulfate Hexahydrate: LD50 (oral-rat) 3250 mg/kg.

HEALTH HAZARDS - Acute:

Inhalation: Inhalation of dust or mist may irritate nose and cause dyspnea. Soluble iron salts may be absorbed by inhalation.

Ingestion: May cause iron poisoning with diarrhea, vomiting, gastrointestinal bleeding, pulmonary edema, liver damage, hypotension, and coma. Doses of 30 mg iron per kg are dangerous and possibly fatal. (This product is 14% iron)

Skin Contact: May cause irritation.

Eye Contact: Dust or mist may irritate the eyes or cause burns. Late eye degeneration has been reported in rabbits.

**HEALTH HAZARDS - Chronic:**

Inhalation: No information found

Ingestion: Repeated dosage may cause hemosiderosis with possible damage to liver and pancreas.

Skin Contact: Repeated and prolonged exposure to dust may irritate skin or cause dermatitis.

Eye Contact: No information found.

Signs and Symptoms of Exposure: No information found.

Medical Conditions Generally Aggravated by Exposure: None identified.

**EMERGENCY FIRST AID PROCEDURES** - Seek medical assistance for further treatment, observation, and support if necessary.

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Get medical attention immediately.

Ingestion: If victim is conscious, immediately give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Do not give carbonates. Get medical attention immediately.

The following antidotes for iron poisoning have been recommended. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be determined by qualified medical personnel. When iron poisoning is evident, give Deferoxamine, 15 mg/kg/hr by continuous intravenous infusion to a maximum of 80 mg/kg in each 12 hour period. Single doses should not exceed 1 gram and the maximum in 24 hours should not exceed 6 grams. Deferoxamine is hazardous in patients with severe renal disorders or anuria. Injected Deferoxamine should be reserved for serious poisoning (Dreisbach, Handbook of Poisoning, 11<sup>th</sup> Edition, 1983). Antidote should be administered by qualified medical personnel only.

Skin Contact: Remove contaminated clothing immediately. Wash exposed area with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15 minutes). Get medical attention immediately.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes or until no evidence of chemical remains, lifting upper and lower eyelids occasionally. Get medical attention immediately.

**SARA/TITLE III HAZARD CATEGORIES AND LISTS**

Acute: Yes	Chronic: Yes	Flammability: No	Pressure: No	Reactivity: No
Extremely Hazardous Substance:	No			
CERCLA Hazardous Substance:	Yes			
SARA 313 Toxic Chemicals:	No			
TSCA Inventory:	Yes			

**SECTION 6 - CONTROL AND PROTECTIVE MEASURES**

Respiratory Protection (Specify Type): If dusty or misty, a NIOSH-approved dust or mist respirator may be used.

Protective Gloves: Employee must wear appropriate protective gloves to prevent contact with this substance.

Eye Protection: Employee must wear splash-proof or dust resistant safety goggles and a faceshield to prevent contact with this substance. Contact lenses should not be worn when working with this material.

Where there is any possibility than an employees eyes and/or skin may be exposed to this substance, the employer should provide an eye-wash fountain and quick-drench shower within the immediate work area for emergency use.

VENTILATION TO BE USED: Provide general dilution ventilation is a satisfactory health hazard control for to keep fume and dust levels as low as possible.

Local Exhaust       Mechanical (General)       Special  
 Other (Specify)

Other Protective Clothing and Equipment: Employee must wear appropriate (impervious) clothing and Equipment to prevent repeated or prolonged skin contact with this substance.

Hygienic Work Practices: Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Keep in a tightly closed container when not in use. Use with adequate ventilation. Wash thoroughly after handling.

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## SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/LEAK PROCEDURES

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Steps to be taken if material is spilled or released: Shovel up dry chemical into an empty container for later use or disposal. Flush residue if permitted by applicable local, state, and federal environmental regulations.

Waste Disposal Methods: Dispose in accordance with all applicable local, state, and federal environmental regulations.

Precautions to be taken in handling and storage: Store in accordance with all applicable local, state, and federal environmental regulations.

Other precautions and/or special hazards: Material is hygroscopic.

NFPA Rating: Health: **1** Flammability: **0** Reactivity: **0**

HMIS Rating: No information available.

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## SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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### Domestic (D.O.T.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)  
Reportable in 1000 pound quantities.

### International (T.M.O.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)  
Reportable in 1000 pound quantities.

### AIR (I.C.A.O.)

Proper Shipping Name: Chemicals, n.o.s. (Non-regulated)  
Reportable in 1000 pound quantities.

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