

**MATERIAL SAFETY DATA SHEET
FOR
THORN SMITH LABORATORIES
ANALYZED QUANTITATIVE UNKNOWNNS**

Magnesium Sulfate for MgO
Catalog Number 80-1355

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-022
Date Prepared: April 2, 1988
Date Updated: December 19, 2011

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

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

Magnesium Sulfate

Formula: MgSo₄
Formula Weight: 120.36
Common Synonyms: Sulfuric acid magnesium salt
Chemical Family: Inorganic Salt
CAS No.: 7487-88-9
OSHA PEL: According to our sources, exposure threshold levels have not been established (N/E).
ACGIH TLV: N/E
OTHER LIMITS: N/A

Sodium Chloride

Common Synonyms: Common salt, Halite
Formula: NaCl
Formula Weight: 58.44
CAS No.: 7647-14-5
OSHA PEL: N/E
ACGIH TLV: N/E
OTHER LIMITS: N/A

SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: N/A (MgSo₄); 1413° C (2585° F) (NaCl)
Specific Gravity (H₂O=1): 2.66 (MgSo₄); 2.16 (NaCl)

Vapor Pressure (mm Hg and Temperature): N/A (MgSO₄); <1 (NaCl)
Melting Point: 1124° C (2055° F) (MgSO₄); 801° C (1474° F) (NaCl)
Vapor Density (Air-1): N/A
Evaporation Rate (-1): N/A
Solubility in Water: 26% at 0° C
Water Reactive: No
Appearance and Odor: Colorless to white, hygroscopic crystals with a saline, bitter taste (MgSO₄); white Crystalline solid (NaCl). Odorless.

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used: N/A
Auto-Ignition Temperature: N/A
Flammability Limits in Air (% by volume): N/A
LEL: N/A UEL: N/A
Extinguisher Media: Carbon dioxide, dry chemical, water spray, or regular foam.
Special Fire Fighting Procedures: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Move container from fire area if you can do it without risk. Do not scatter spilled material with high-pressure water streams. Dike fire-control water for later disposal. Use agents suitable for type of surrounding fire. Avoid breathing hazardous vapors, keep upwind.
Unusual Fire and Explosion Hazards: Toxic gases produced: Hydrogen, toxic oxides of sulfur.

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: Stable Unstable
Conditions to Avoid: Humidity. May burn but does not ignite readily. Avoid contact with strong oxidizers, excessive heat, sparks, or open flame.
Incompatibility (Materials to Avoid): Ethoxyethynyl, alcohols + ether, maleic anhydride, phosphorus (MgSO₄); strong oxidizing agents, lithium, inter-halogens (ex. bromine trifluoride), iron, cement, strong acids (NaCl).
Hazardous Decomposition Products: Toxic oxides of sulfur (MgSO₄); Hydrogen chloride (NaCl).
HAZARDOUS POLYMERIZATION: May Occur Will Not Occur

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY:
 Inhalation Ingestion Skin Contact Eye Contact Not Hazardous
CARCINOGEN LISTED IN:
 NTP OSHA IARC Monograph Not Listed
TOXICITY: Magnesium Sulfate: 428 mg/kg oral-man TDLO; 5000 mg/kg oral-mouse LDLO; 3000 mg/kg oral-rabbit LDLO; 645 mg/kg subcutaneous-mouse LD50; 1750 mg/kg subcutaneous-rabbit LDLO; 1800 mg/kg subcutaneous-guinea pig LDLO; 1500 mg/kg subcutaneous-dog LDLO; 1000 mg/kg subcutaneous-cat LDLO; 80 mg/kg/2 months intermittent intravenous-woman LDLO; 48 mg/kg intra-

venous-mouse LDLO; 1200 mg/kg intraperitoneal-dog LDLO; 20 mg/kg intraspinal-woman TDLO; mutagenic data (RTECS); reproductive effects data (RETCS).

Sodium Chloride: LD50 (oral-rat) 3000 mg/kg; LD50 (ipr-mouse) 2602 mg/kg; LD50 (scu-mouse) 3150 mg/kg; KD50 (iv-mouse) 645 mg/kg.

HEALTH HAZARDS - Acute:

Inhalation: May cause irritation to upper respiratory tract and mucous membranes. Levels above 10 UG/M3 of suspended sulfates in the air may cause an excess risk of asthmatic attacks in susceptible persons.

Ingestion: Large doses may cause diarrhea and abdominal pain. More serious symptoms of hypermagnesemia, such as electrolyte imbalance, central nervous system depression and neurological and cardiac impairment, are rare in the absence of intestinal or renal disease since magnesium is poorly absorbed from the gastrointestinal tract and readily excreted by the kidneys.

Skin Contact: May cause minor irritation, with stinging sensation when in contact with skin cuts.

Eye Contact: Contact with dust may cause mild irritation to the conjunctiva with redness and pain. It is reported to be essentially innocuous when applied in solution to the eyes. However, there is a report of moderate burning sensation occurring after application of a concentrated solution to human eyes.

HEALTH HAZARDS - Chronic: Elevated blood pressure and accelerated respiration rate, increased incidence of digestive disorders.

Ingestion: A patient with normal kidney function developed symptomatic hypermagnesemia with respiratory arrest and bradycardia after receiving 90 grams of magnesium sulfate over 18 hours. Magnesium preparations may cause phosphorous depletion syndrome. Use of magnesium containing antacids has cause renal failure due to precipitation of magnesium ammonium phosphate in the kidney.

Signs and Symptoms of Exposure: No information found.

Medical Conditions Generally Aggravated by Exposure: High Blood Pressure.

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

Inhalation: If a person breathes in large amounts, move the exposed person to fresh air. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

Ingestion: Induce emesis or administer lavage, use sodium cathartics with caution in the presence of cardiac failure and renal failure. Activated charcoal is not useful. Treatment should be performed by medical personnel. Get medical attention immediately.

Skin Contact: Remove any contaminated clothing. Wipe off excess from skin. Immediately wash skin with soap and water for at least 15 minutes. Get medical attention immediately.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention immediately.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

Acute: No Chronic: No Flammability: No Pressure: No Reactivity: No

Extremely Hazardous Substance: No

CERCLA Hazardous Substance: No

SARA 313 Toxic Chemicals: No

TSCA Inventory: No (MgSO₄); Yes (NaCl)

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection (Specify Type): If airborne concentration is high, use an NIOSH approved respirator or dust mask.

Protective Gloves: Wear rubber gloves to prevent contact with substance.

Eye Protection: Wear chemical safety goggles.

VENTILATION TO BE USED: Use adequate general or local exhaust ventilation to keep fume or dust levels as low as possible.

Local Exhaust Mechanical (General) Special
 Other(Specify)

Other Protective Clothing and Equipment: Wear clean body-covering 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 container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling. Store away from incompatible substances.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & LEAK/USE PROCEDURES

Steps to be taken if material is spilled or released: Wear suitable protective clothing. Carefully sweep up and place in suitable clean, dry containers for reclamation or later disposal. Do not flush spilled material into sewer. Keep unnecessary people away.

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

Precautions to be taken in handling and storage: Keep in a tightly closed container. Hygroscopic. Suitable for any general chemical storage area. Store in accordance with all applicable local, state, and federal environmental regulations.

Other precautions and/or special hazards: No information available.

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

HMIS Rating: No information available.

SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

Domestic (D.O.T.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

International (T.M.O.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

AIR (I.C.A.O.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

The information published in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and assume no liability resulting from its use. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.