

Bremtag

Material Safety Data Sheet

Material Name: Magnesium Sulfate Anhydrous

ID: C1-126A

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Magnesium Sulfate Anhydrous, Technical Standard Grade

Product Use: For Commercial Use

Synonyms: Calcined Kieserite, Sulfuric acid, magnesium salt

Supplier Information

Chem One Ltd.
8017 Pinemont Drive, Suite 100
Houston, Texas 77040-6519

Phone #: (713) 896-9966
Fax #: (713) 896-7540
Emergency #: (800) 424-9300 or (703) 527-3887

General Comments: FOR COMMERCIAL USE ONLY; NOT TO BE USED AS A PESTICIDE.

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Components	Percent
7487-88-9	Magnesium Sulfate Anhydrous	> 98%

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Magnesium sulfate (7487-88-9).

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview

Product exists as colorless or white crystals or powder. May cause irritation of the skin, eyes, and upper respiratory tract. Use methods suitable for the surrounding fire. Firefighters should wear full protective equipment and clothing.

Hazard Statements

Caution! May cause irritation to eyes, skin and upper respiratory tract.

Potential Health Effects: Eyes

This product may cause irritation to the eyes.

Potential Health Effects: Skin

This product may cause irritation to the skin.

Potential Health Effects: Ingestion

Low oral toxicity. Ingestion of large amounts of this material may cause diarrhea and gastrointestinal discomfort due to its laxative effects.

Potential Health Effects: Inhalation

Dusts and mists from solutions may cause mild to moderate irritation of the nose and throat.

HMIS Ratings: Health Hazard: 1 Fire Hazard: 0 Physical Hazard: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Immediately flush eyes with large amounts of room temperature water, occasionally lifting the lower and upper lids, for at least 15 minutes. If symptoms persist after 15 minutes of irrigation, seek medical attention.

First Aid: Skin

Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Seek immediate medical attention if irritation develops or persists.

First Aid: Ingestion

DO NOT INDUCE VOMITING, unless directed by medical personnel. Have victim rinse mouth thoroughly with water, if conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. Contact a physician or poison control center immediately.

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*** Section 4 - First Aid Measures (Continued) ***

First Aid: Inhalation

Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.

First Aid: Notes to Physician

There is no specific antidote. Care is symptomatic and supportive.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not applicable

Upper Flammable Limit (UFL): Not applicable

Auto Ignition: Not available

Rate of Burning: Not applicable

General Fire Hazards

This material will not burn.

Hazardous Combustion Products

This product decomposes to form toxic sulfur dioxide gases.

Extinguishing Media

Use methods for the surrounding fire.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Method Used: Not applicable

Lower Flammable Limit (LFL): Not applicable

Flammability Classification: Not applicable

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information).

Clean-Up Procedures

Prevent material from entering sewers or waterways. Put material in suitable, covered, labeled containers.

Evacuation Procedures

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials that burn away from spilled material. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Avoid inhalation of dusts. Wear adequate personal protective equipment. Have emergency equipment readily available.

*** Section 7 - Handling and Storage ***

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Keep containers closed--material is hygroscopic. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers).

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*** Section 7 - Handling and Storage ***

Storage Procedures (continued)

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored. Wipe down area of use periodically to avoid the accumulation of dusts.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

No exposure guidelines have been established.

B: Component Exposure Limits

B: Component Exposure Limits

The exposure limits given are for Particulates Not Otherwise Classified.

ACGIH: 10 mg/m³ TWA (Inhalable fraction)

3 mg/m³ TWA (Respirable fraction)

OSHA: 15 mg/m³ TWA (Total dust)

5 mg/m³ TWA (Respirable fraction)

DFG MAKs 4 mg/m³ TWA (Inhalable fraction)

1.5 mg/m³ TWA (Respirable fraction)

Engineering Controls

Use general mechanical ventilation. Local exhaust is suggested for use, where possible, in enclosed or confined spaces.

PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132). Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields or chemical goggles. If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Wear appropriate work gloves for type of operation. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

Personal Protective Equipment: General

Use good hygiene practices when handling this material including changing and laundering work clothing after use. Have a safety shower or eye-wash fountain available. Wash hands thoroughly after handling material. Do not eat, drink, or smoke in work areas.

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*** Section 9 - Physical & Chemical Properties ***

Physical Properties: Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

Appearance: Colorless or white crystals/powder	Odor: Odorless
Physical State: Solid	pH: 9 (saturated soln. at 20 deg C)
Vapor Pressure: 8 mm Hg (at 68 deg. F)	Vapor Density: Not applicable
Boiling Point: Not applicable	Freezing/Melting Point: 1127 deg C
Solubility (H2O): Readily soluble (34 g/100 mL at 20 deg C)	Specific Gravity: 2.66 (water=1)
Percent Volatile: Not applicable	Particle Size: Abt .1-1.0mm
Softening Point: Not applicable	Evaporation Rate: Not applicable
Viscosity: Not applicable	Bulk Density: Approx. 1.3-1.5 g/cm3
Chemical Formula: MgSO4	Molecular Weight: 120.37

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Under normal conditions of temperature and pressure, Magnesium Sulfate Anhydrous is stable

Chemical Stability: Conditions to Avoid

Avoid high temperatures, excessive heat, incompatible materials and air (material is hygroscopic). Store away from moisture.

Incompatibility

Ethoxy ethyl alcohols, arsenates, phosphates, tartrates, lead, barium, strontium and calcium, strong oxidizers.

Hazardous Decomposition

Oxides of sulfur and magnesium.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute Toxicity

A: General Product Information

Acute exposure may cause mild skin and eye irritation. Gastrointestinal absorption may cause acute magnesium poisoning. Symptoms include flushing, sweating, low blood pressure, depression of reflexes, flaccid paralysis, hypothermia, circulatory collapse, and depression of CNS and heart function. Excessive long-term ingestion of this product may cause also cause magnesium poisoning with symptoms described above.

B: Component LD50/LC50 (Magnesium Sulfate Anhydrous (CAS # 7487-88-9))

LD₅₀ (Subcutaneous-Rat) 1200 mg/kg; LD₅₀ (Subcutaneous-Mouse) 645 mg/kg; LD₅₀ (Intraperitoneal-Mouse) 1029 mg/kg

C: Component TDLo/TCLo (Magnesium Sulfate Anhydrous (CAS # 7487-88-9))

TDLo (Oral-Man) 428 mg/kg: Behavioral: muscle weakness; Lungs, Thorax, or Respiration: other changes; TDLo (Oral-Woman) 351 mg/kg: Behavioral: muscle weakness; Cardiac: arrhythmias (including changes in conduction); Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); TDLo (Intraspinal-Woman) 20 mg/kg: Peripheral Nerve and Sensation: flaccid paralysis with appropriate anesthesia; TDLo (Subcutaneous-Rat) 9 gm/kg: female 15-20 day(s) after conception: Reproductive: Maternal Effects: other effects;

C: Component LDLo/LCLo (Magnesium Sulfate Anhydrous (CAS # 7487-88-9))

LDLo (Intravenous-Mouse) 48 mg/kg; LDLo (Oral-Mouse) 5 gm/kg; LDLo (Oral-Rabbit) 3 gm/kg; LDLo (Intraperitoneal-Dog) 1200 mg/kg; LDLo (Subcutaneous-Dog) 1500 mg/kg; LDLo (Subcutaneous-Cat) 1 gm/kg: Behavioral: general anesthetic; LDLo (Subcutaneous-Rabbit) 1750 mg/kg: Behavioral: somnolence (general depressed activity), convulsions or effect on seizure threshold; Lungs, Thorax, or Respiration: other changes; LDLo (Subcutaneous-Guinea Pig) 1800 mg/kg: Behavioral: general anesthetic, somnolence (general depressed activity)

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*** Section 11 - Toxicological Information (Continued) ***

Carcinogenicity

A: General Product Information

Information not available.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology

Information not available.

Neurotoxicity

Information not available.

Mutagenicity

Gene Conversion and Mitotic Recombination (*Bacteria-Escherichia coli*) 5 pph; Phage Inhibition Capacity (*Bacteria-Escherichia coli*) 800 µmol/L

Teratogenicity

TDLo (Intravenous-Woman) 320 mg/kg; female 39 week(s) after conception: Reproductive: Maternal Effects: other effects; Effects on Embryo or Fetus: other effects to embryo; TDLo (Intraperitoneal-Rat) 750 mg/kg; female 17-21 day(s) after conception: Reproductive: Effects on Embryo or Fetus: other effects to embryo; Specific Developmental Abnormalities: hepatobiliary system; TDLo (Subcutaneous-Rat) 18 gm/kg; female 15-20 day(s) after conception: Reproductive: Effects on Newborn: growth statistics (e.g.%, reduced weight gain), physical

Other Toxicological Information

None.

*** Section 12 - Ecological Information ***

Ecotoxicity

No information available.

Environmental Fate

No potential for food chain concentration.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

As shipped, product is not considered a hazardous waste by the EPA.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Review federal, provincial, and local government requirements prior to disposal. Disposal by controlled incineration or secure landfill may be acceptable.

*** Section 14 - Transportation Information ***

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

Shipping Name: Not Regulated

Hazard Class: Not Classified

UN/NA #: Not Classified

Packing Group: None

Required Label(s): None

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***** Section 14 - Transportation Information (Continued) *****

International Air Transport Association (IATA)

For Shipments by Air transport: We classify this product as hazardous (Class 9) when shipped by air because 49 CFR 173.140 (a). "For the purposes of this subchapter, miscellaneous hazardous material (Class 9) means a material which presents a hazard during transportation, but which does not meet the definition of any other hazard class. This class includes: (a) Any material which has an anesthetic, noxious, or other similar property which could cause extreme annoyance or discomfort to a flight crew member so as to prevent the correct performance of assigned duties."

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Magnesium Sulfate)

Hazard Class: 9

UN: UN 3077

Packing Group: III

Passenger & Cargo Aircraft Packing Instruction: 911

Passenger & Cargo Aircraft Maximum Net Quantity: No Limit

Limited Quantity Packing Instruction (Passenger & Cargo Aircraft): Y911

Limited Quantity Maximum Net Quantity (Passenger & Cargo Aircraft): 30 kg

Special Provisions: A97

ERG Code: 9L

International Maritime Organization (I.M.O.) Classification

Magnesium Sulfate is not regulated under I.M.O.

***** Section 15 - Regulatory Information *****

US Federal Regulations

A: General Product Information

No additional information.

B: Component Information

None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

Magnesium Sulfate Anhydrous (7487-88-9)

CERCLA: Final RQ = Not Applicable

SARA 302 (EHS TPQ) There are no specific Threshold Planning Quantities for Salicylic Acid. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Magnesium Sulfate Anhydrous	7487-88-9	No	No	No	Yes	No

State Regulations

A: General Product Information

Other state regulations may apply.

B: Component Information

None of this product's components are listed on the state lists from CA, FL, MA, MN, NJ, or PA.

Component	CAS #	CA	FL	MA	MN	NJ	PA
Magnesium Sulfate Anhydrous	7487-88-9	No	No	No	No	No	No

Other Regulations

A: General Product Information

Not determined.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Magnesium Sulfate Anhydrous	7487-88-9	Yes	Yes	Yes

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***** Section 15 - Regulatory Information (Continued) *****

C: Component Information (Canada)

No components are listed in the WHMIS IDL

Component	CAS #	Minimum Concentration
Magnesium Sulfate Anhydrous	7487-88-9	No disclosure limit

ANSI Labeling (Z129.1):

CAUTION! MAY CAUSE RESPIRATORY SYSTEM, SKIN AND EYE IRRITATION. HARMFUL IF INGESTED OR INHALED OR BY PROLONGED OR REPEATED SKIN CONTACT. Avoid contact with skin, eyes, or clothing. Do not taste or swallow. Avoid breathing dusts and particulates. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH-approved respiratory protection, as appropriate. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, CO₂, or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with inert material. Place residue in suitable container. Consult Material Safety Data Sheet for additional information.

***** Section 16 - Other Information *****

Other Information

Chem One Ltd. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com. Revision date: 05/30/01

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

Contact Person: Sue Palmer-Koleman, PhD

Contact Phone: (713)-896-9966

Revision log

- 08/08/00 4:26 PM SEP Changed company name, Sect 1, from Corporation to Ltd. Changed synonym from magnesium sulfate, 7 hydrate to sulfuric acid, magnesium salt, Sect 1; "colorless to white crystals" to colorless or white crystals or powder, Sect 3 and 9; Changed melting point from 1130 deg C to 1127 deg C and specific gravity from 1.7 to 2.66, Sect 9; renumbered MSDS from C1-126 to C1-126A
- 05/14/01 9:31 AM HDF Checked exposure limits; made changes to Sect 9; overall review, add SARA 311/312 Haz Ratings.
- 08/20/01 12:58 PM CLJ Add Shipments by Air information to Section 14, Changed contact to Sue, non-800 Chemtrec Num.
- 06/07/03 8:45 PM HDF General review and up-date of entire MSDS. Up-graded Section 8 to include PNOC exposure limits. Up-date of HMIS categories. Up-date of Section 8. Addition of toxicological data Section 11. Up-date of Section 14.
- 04/05/04 9:27AM SEP: Added syn, sect 1, corrected typos, Sect 10 and 11.

This is the end of MSDS #C1-126A