



## MATERIAL SAFETY DATA SHEET

### Magnesium Sulfate, Heptahydrate

#### 1. Product Identification

**Synonyms:** Magnesium sulfate (1:1) heptahydrate; Epsom salts; sulfuric acid magnesium salt

**CAS No.:** 10034-99-8

**Molecular Weight:** 246.48

**Chemical Formula:**  $MgSO_4 \cdot 7H_2O$

**Product Codes:** M172

#### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Magnesium Sulfate, Heptahydrate	10034-99-8	99 - 100%	Yes

#### 3. Hazards Identification

##### EMERGENCY OVERVIEW

**CAUTION!!** MAY BE HARMFUL IF SWALLOWED.

Health Rating: 1 - Slight

Flammability Rating: 0 - None

Reactivity Rating: 0 - None

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Orange (General Storage)

##### Potential Acute Health Effects:

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation.

##### **Inhalation:**

Dust may be slightly irritating. Sore throat or coughing may occur.

##### **Ingestion:**

Since magnesium salts are slowly absorbed, abdominal pain, vomiting and diarrhea may be the only symptoms. However, if elimination is blocked by bowel blockage or other reasons, CNS depression, lack of reflexes, hypocalcemia (deficiency of calcium in the blood) may occur.

##### **Skin Contact:**

No adverse effects expected but may cause minor skin irritation.

**Eye Contact:**

No adverse effects expected but dust may cause mechanical irritation.

**Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.

Repeated or prolonged exposure is not known to aggravate medical condition.

**4. First Aid Measures****Inhalation:**

Allow the victim to rest in a well ventilated area. Get medical attention for any breathing difficulty.

**Serious Inhalation:**

Not available.

**Ingestion:**

Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention. Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

**Skin Contact:**

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

**Serious Skin Contact:**

Not available.

**Eye Contact:**

Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Wash thoroughly with running water. Get medical advice if irritation develops.

**Note to Physician:**

IV administration of calcium gluconate will partially reverse the effects of acute magnesium toxicity. Ventricular support with calcium chloride infusion and mannitol forced diuresis has also been successful.

**5. Fire Fighting Measures****Fire:**

Not considered to be a fire hazard.

**Explosion:**

Not considered to be an explosion hazard.

**Special Remarks on Explosion Hazards:**

Not available.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**Products of Combustion:**

Not available.

**Fire Hazards in Presence of Various Substances:**

Not applicable.

**Special Information on Fire Hazards:**

Not available.

**Fire Fighting Media and Instructions:**

Not applicable.

**Special Information:**

Use protective clothing and breathing equipment appropriate for the surrounding fire.

**6. Accidental Release Measures****Small Spill:**

Use appropriate tools to put the spilled solid in a convenient waste disposal container. 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. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

**7. Handling and Storage****Precautions:**

No specific safety phrase has been found applicable for this product.

**Storage:**

No specific storage is required. Use shelves or cabinets sturdy enough to bear the weight of the chemicals. Be sure that it is not necessary to strain to reach materials, and that shelves are not overloaded.

**8. Exposure Controls/Personal Protection****Airborne Exposure Limits:**

None established.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

**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.

**Personal Respirators:**

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear protective gloves and clean body-covering clothing.

**Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

**9. Physical and Chemical Properties****Appearance:**

Transparent crystals, or white powder.

**Odor:**

Odorless.

**Solubility:**

Very soluble in water

**Density:**

1.67 g/ml @ 4C.

**pH:**

Aqueous solution is neutral or slightly acid.

**% Volatiles by volume @ 21C (70F):**

0.

**Boiling Point:**

Not applicable.

**Melting Point:**

1124C (2055F) Decomposes. Loses all waters of hydration @ 250C (482F).

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Molecular Weight:**

246.48

**Evaporation Rate (BuAc=1):**

No information found.

**10. Stability and Reactivity****Stability:**

Stable under ordinary conditions of use and storage. Loses some moisture on exposure to dry air at room temperatures.

**Conditions to Avoid:**

Heat, moisture, incompatibles.

**Conditions of Instability:**

Not available.

**Incompatibilities:**

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

**Hazardous Decomposition**

Oxides of sulfur and the contained metal.

**Special Remarks on Reactivity:**

Not available.

**Corrosivity:**

Non-corrosive in presence of glass.

**Hazardous Polymerization:**

Will not occur.

**11. Toxicological Information****Routes of Entry:**

Ingestion.

**Toxicity to Animals:**

LD50: Not available. LC50: Not available.

**Chronic Effects on Humans:**

Not available.

**Other Toxic Effects on Humans:**

Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant), of inhalation.

**Special Remarks on Chronic Effects on Humans:**

Passes through the placental barrier in human.

**Special Remarks on other Toxic Effects on Humans:**

Not available.

**12. Ecological Information****Ecotoxicity:**

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 products of degradation are more toxic.

**13. Disposal Considerations**

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. **Transport Information**

### **DOT Classification:**

Not a DOT controlled material.

### **Identification:**

Not applicable.

### **Special Provisions for Transport:**

Not available.

### **Protective Equipment:**

Gloves (impervious). Synthetic apron. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

## 15. **Other Information**

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

### **Label Hazard Warning:**

CAUTION! MAY BE HARMFUL IF SWALLOWED.

### **Label Precautions:**

Keep container closed.

Wash thoroughly after handling.

### **Label First Aid:**

If swallowed, give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

### **Product Use:**

Laboratory Reagent.

### **Revision Information:**

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.*



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