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**MAGNESIUM SULFATE**

**1. Product Identification**
Synonyms: Magnesium sulfate (1:1) heptahydrate; Epsom salts; sulfuric acid, magnesium salt (1:1), heptahydrate; Magnesium sulfate, 7- hydrate
CAS No.: 7487-88-9 (Anhydrous) 10034-99-8 (heptahydrate)
Molecular Weight: 246.47
Chemical Formula: MgSO4.7H2O

**2. Composition/Information on Ingredients**

| Ingredient | CAS No | Percent | Hazardous |
|---|---|---|---|
| Magnesium Sulfate Anhydrous | 7487-88-9 | 99 - 100% | Yes |

**3. Hazards Identification**
Emergency Overview : CAUTION! MAY BE HARMFUL IF SWALLOWED.

**Potential Health Effects**

**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.
**Chronic Exposure:** No information found.
**Aggravation of Pre-existing Conditions:** No information found.

**4. First Aid Measures**
**Inhalation:** Remove to fresh air. Get medical attention for any breathing difficulty.
**Ingestion:** Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.
**Skin Contact:** Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
**Eye Contact:** 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.
**Fire Extinguishing Media:** Use any means suitable for extinguishing surrounding fire.
**Special Information:** Use protective clothing and breathing equipment appropriate for the surrounding fire.

**6. Accidental Release Measures**
Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

**7. Handling and Storage**
Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

**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.
**Personal Respirators (NIOSH Approved):** 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 / Specification

**Appearance:** Transparent crystals, or white powder.

**Odor:** Odorless.

**Molecular Weight:** 246.47

**Chemical Formula:** MgSO4.7H2O

**Assay.** 98.00%

**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)

**10. Stability and Reactivity**
**Stability:** Stable under ordinary conditions of use and storage. Loses some moisture on exposure to dry air at room temperatures.
**Hazardous Decomposition Products:** Oxides of sulfur and the contained metal.
**Hazardous Polymerization:** Will not occur.
**Incompatibilities:** Ethoxy ethyl alcohols, arsenates, phosphates, tartrates, lead, barium, strontium, and calcium
**Conditions to Avoid:** Heat, moisture, incompatibles.

**11. Toxicological Information**

| Ingredient | Known | Anticipated | IARC Category |
|---|---|---|---|
| Magnesium Sulfate Anhydrous (7487-88-9) | No | No | None |

**12. Ecological Information**
Environmental Fate: No information found.
Environmental Toxicity: No information found.

**13. Disposal Considerations**
Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal 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**
Not regulated.

**15. Regulatory Information**

| Ingredient | TSCA | EC | Japan | Australia |
|---|---|---|---|---|
| Magnesium Sulfate Anhydrous (7487-88-9) | Yes | Yes | Yes | Yes |

**16. 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.