

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: (5N) 99.999% Magnesium Acetate Solution

Product Code: MG-AC-05-SOL

CAS Number: 16674-78-5

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
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SECTION 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a light-amber solution with a slight, vinegar odor. The primary health hazard associated with this product is the potential for slight irritation of eyes, skin, and other contaminated tissue. This product is not flammable or reactive. Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The primary routes of overexposure for the solution are via inhalation and contact with skin and eyes. The following paragraphs describe the symptoms of overexposure to this material.

INHALATION: If vapors, mists, or sprays of this product are inhaled, they may slightly irritate the nose, throat, and lungs. Symptoms may include the following: sneezing, coughing, and difficulty breathing. These symptoms generally are alleviated when the overexposure ends.

CONTACT WITH SKIN or EYES: Depending on the duration of overexposure, contact with the eyes will cause slight irritation, pain, and reddening. Depending on the duration of skin contact, skin overexposures may cause reddening, discomfort, and slight irritation.

SKIN ABSORPTION: Skin absorption is not a significant route of overexposure for Magnesium Acetate, Tetrahydrate (a component of this product).

INGESTION: If this product is swallowed, slight irritation of the mouth, throat, esophagus, and other tissues of the digestive system will occur immediately upon contact. Symptoms of such overexposure can include nausea, abdominal pain, vomiting, and diarrhea.

INJECTION: Accidental injection of this product, via laceration or puncture by a contaminated object may cause pain and slight irritation in addition to the wound.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. In the event of

overexposure, the following symptoms may be observed:

ACUTE: The primary hazard associated with this product is the potential for slight irritation of skin, eyes, and other contaminated tissue.

CHRONIC: No chronic effects are currently reported for prolonged or repeated exposures to this product. See Section 11 (Toxicology Information) for additional data.

TARGET ORGANS: Skin, eyes.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Magnesium Acetate Tetrahydrate: 50%

Water: Balance

SECTION 4. FIRST AID MEASURES

SKIN EXPOSURE: If this product contaminates the skin, begin decontamination with running water. The minimum flushing is for 15 minutes if the overexposure results in slight irritation. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention if any adverse effect occurs.

EYE EXPOSURE: If this product's liquid or vapors enter the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 15 minutes. Contaminated individual must seek immediate medical attention.

INHALATION: If vapors, mists, or sprays of this product are inhaled, remove contaminated individual to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers.

INGESTION: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Contaminated individual should drink milk, egg whites, or large quantities of water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. Contaminated individuals must be taken for medical attention if any adverse reaction occurs. Rescuers should be taken for medical attention, if necessary. Take a copy of label and MSDS to health professional with contaminated individual.

SECTION 5. FIREFIGHTING MEASURES

FLASH POINT: Not flammable.

AUTOIGNITION TEMPERATURE: Not flammable.

FLAMMABLE LIMITS (in air by volume, %): Lower (LEL): N/A.

Upper (UEL): N/A.

FIRE EXTINGUISHING MATERIALS:

Water Spray: YES Carbon Dioxide: YES

Foam: YES Dry Chemical: YES

Halon: YES Other: Any "ABC" Class.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When involved in a fire, this material may decompose and produce acrid vapors, magnesium compounds, and oxides of carbon.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection.

Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment.

Chemical resistant clothing may be necessary. Move containers from fire area if they have not been

exposed to heat and if it can be done without risk to personnel. If this product is involved in a fire, fire run-off water should be contained to prevent possible environmental damage.

SECTION 6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a large spill, clear the affected area, and protect people.

In the event of a non-incident release (e.g., 55-gallon release in which excessive splashes or sprays can be generated), minimum Personal Protective Equipment should be Level C: triple-gloves (rubber gloves and nitrile gloves, over latex gloves), chemically resistant suit and boots, hard-hat, and an air-purifying respirator with a high-efficiency particulate filter. Level B, which include Self Contained Breathing Apparatus, must be worn in situations in which the oxygen level is less than 19.5% or unknown. Absorb spilled liquid with polypads or other suitable absorbent materials. Decontaminate the area thoroughly.

Place all spill residue in a suitable container and seal. Dispose of in accordance with Federal, State, and local waste disposal regulations (see Section 13, Disposal Considerations).

SECTION 7. HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU.

Wash hands after handling this product. Do not eat, drink, smoke or apply cosmetics while handling this product. All work practices should minimize the generation of splashes and aerosols. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely.

Avoid breathing vapors or mists generated by this product. Use in a well-ventilated location. Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual liquid or vapors. Therefore, empty containers should be handled with care.

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Material should be stored in secondary containers, or in a diked area, as appropriate. Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Exhaust directly to the outside. Use local exhaust ventilation, and process enclosure if necessary, to control mist formation. Supply sufficient replacement air to make up for air removed by system. Ensure eyewash/safety shower stations are available near areas where this product is used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (Composition and Information on Ingredients). If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134 or applicable U.S. State regulations (or the appropriate

standards of Canada and its Provinces). Use supplied air respiration protection during response procedures to non-incident releases and if oxygen levels are below 19.5% or are unknown.

EYE PROTECTION: Splash goggles or safety glasses.

HAND PROTECTION: Wear Neoprene or Rubber gloves for routine industrial use. Use triple gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this MSDS.

BODY PROTECTION: Use body protection appropriate for task. An apron, or other impermeable body protection is suggested. Full-body chemical protective clothing is recommended for emergency response procedures.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR DENSITY: N/A.

EVAPORATION RATE (n-BuAc=1): Similar to water.

SPECIFIC GRAVITY @ 15°C (59°F): 1.2

FREEZING POINT or RANGE: Not established.

SOLUBILITY IN WATER: Completely

BOILING POINT: > 100°C (> 212°F)

VAPOR PRESSURE: N/A.

pH @ 25°C (77°F): Approximately 7.0

ODOR THRESHOLD: 2.5 mg/m³ (acetic acid)

LOG WATER/OIL DISTRIBUTION COEFFICIENT: Not available.

APPEARANCE AND COLOR: This product is a light-amber solution with a slight, vinegar odor.

HOW TO DETECT THIS SUBSTANCE (warning properties): The odor may be a distinguishing characteristic of this product.

SECTION 10. STABILITY AND REACTIVITY

STABILITY: Stable.

DECOMPOSITION PRODUCTS: Magnesium compounds, carbon oxides.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Strong oxidizing agents, strong acids.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Extreme heat and contact with incompatible chemicals.

SECTION 11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Toxicology data are not currently available for the components of this product specifically listed in Section 2 (Composition and Information on Ingredients). Toxicology data are available for a related compound, as follows:

MAGNESIUM ACETATE:

Intravenous-Mouse LD50: 111 mg/kg;

SUSPECTED CANCER AGENT: The components of this product are not found on the following lists:

FEDERAL OSHA Z LIST, NTP, IARC, and CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer causing agents by these agencies.

IRRITANCY OF PRODUCT: This product is slightly irritating to contaminated tissue.

SENSITIZATION OF PRODUCT: This product contains no known sensitizers with repeated or prolonged use.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans.

Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to cause teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to cause reproductive toxicity effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing dermatitis, or other skin disorders, may be aggravated by overexposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure. Be observant for signs of pulmonary edema in the event of severe inhalation overexposures.

ACGIH BIOLOGICAL EXPOSURE INDICES: Currently, there are no ACGIH Biological Exposure Indices (BEIs) associated with the components of this product.

SECTION 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL STABILITY: The components of this product are relatively stable under ambient, environmental conditions.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: This product may be harmful to terrestrial plant or animal life, especially if released in large quantities. Refer to Section 11 (Toxicology Information) for clinical data on the effects of this product's components on test animals.

EFFECT OF CHEMICAL ON AQUATIC LIFE: This product may be harmful to aquatic plant or animal life, especially if released in large quantities.

SECTION 13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate US. Federal, State, and local regulations, or the applicable standards of Canada and its Provinces. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

EPA WASTE NUMBER: N/A to wastes consisting only of this product.

SECTION 14. TRANSPORT INFORMATION

THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Not Applicable

HAZARD CLASS NUMBER and DESCRIPTION: Not Applicable

UN IDENTIFICATION NUMBER: Not Applicable

PACKING GROUP: Not Applicable

DOT LABEL(S) REQUIRED: Not Applicable

NORTH AMERICAN EMERGENCY RESPONSE GUIDE NUMBER (1996): Not Applicable

MARINE POLLUTANT: This product does not contain any components which are designated by the Department of Transportation to be Marine Pollutants (per 49 CFR 172.101 Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS NOT CONSIDERED AS DANGEROUS GOODS.

SECTION 15. REGULATORY INFORMATION

ADDITIONAL UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: This product is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: N/A.

U.S. CERCLA REPORTABLE QUANTITY (RQ): N/A.

U.S. TSCA INVENTORY STATUS: Magnesium Acetate Tetrahydrate is a hydrate of an anhydrous form which is on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: N/A.

U.S. STATE REGULATORY INFORMATION: The components of this product are not covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: No.

California - Permissible Exposure Limits for Chemical Contaminants: No.

Florida - Substance List: No.

Illinois - Toxic Substance List: No.

Kansas - Section 302/313 List: No.

Massachusetts - Substance List: No.

Michigan -Critical Materials Register: No.

Minnesota - List of Hazardous Substances: No.

Missouri - Employer Information/Toxic Substance List: No.

New Jersey - Right to Know Hazardous Substance List: No.

North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.

Pennsylvania - Hazardous Substance List: No.

Rhode Island - Hazardous Substance List: No.

Texas - Hazardous Substance List: No.

West Virginia - Hazardous Substance List: No.

Wisconsin - Toxic and Hazardous Substances: No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this product is on the California Proposition 65 lists.

ANSI LABELING (per Z129.1, provided to summarize occupational safety hazards): CAUTION! MAY CAUSE SKIN OR EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED. Do not taste or swallow. Do not get on skin or in eyes. Avoid breathing vapors or mists. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Wear gloves, goggles and suitable body protection. 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.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL INVENTORY: Magnesium Acetate Tetrahydrate is a hydrate of an anhydrous form which is on the DSL/NDSL Inventory.

CANADIAN WHMIS SYMBOLS: N/A.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The

information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.