

## Material Safety Data Sheet

Identity: Magnesium

Formula: Mg

### SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

CAS #	OSHA PEL	ACGIH TLV	%
7439-95-4	N/A	N/A	100%

### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: 1107.0 °C

Vapor Pressure: 1mm at 621.0 °C

Melting Point: 648.80 °C

Vapor Density: 1.7

Evaporation Rate: N/A

Percent Volatile by Volume: N/A Solubility

in water: decomposes to form (MgOH)<sub>2</sub>

Specific Gravity (water=1): 1.74 at 20.0 °C

*Appearance and odor:* Silver-white powder, no odor.

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

*Flash Point:* N/A*Method Used:* Flammable solid*Explosive Limits:* N/A*UEL:* N/A*Extinguishing Media:* G-1 powder or powdered talc. DO NOT USE. Water or any ordinary extinguishers.

Unusual Fire and Explosion Hazards:

Dangerous when wet. Dangerous fire hazard in the form of dust or flakes when exposed to flame or oxidizing agents. Powder will auto ignite when heated in air even where kept below melting point. Burns vigorously with an intense white flame. Water acts as an accelerant, causing flare-ups, and "popping" and will produce hydrogen gas which may result in explosion. Magnesium fires do not flare up violently unless there is moisture present. May react with moisture and acids to evolve hydrogen. May be ignited by a spark, match flame, or even spontaneously when the material is finely divided and damp, particularly with water-oil emulsion. Ignites in carbon dioxide at 780 °C, molten carbonate + heat; fluorocarbon polymers + heat. Hypergolic reaction with nitric acid+2-nitroaniline. Reacts with acetylenic compounds to form explosive magnesium acetylide. Violent reaction with ammonium salts, chlorate salts, beryllium fluoride, boron diiodophosphide, carbon tetrachloride + method, halogens, or interhalogens, hydrogen iodide, metal oxides + heat, nitrogen, silicon dioxide powder + heat, sulfur + heat, barium peroxide, nitric acid vapor, hydrogen peroxide, ammonium nitrate, sodium nitrate + heat, dinitrogen tetra oxide, lead dioxide.

## SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid:* None

*Incompatibility (stability):* Acids, water, chlorinated solvents, methanol, hydrogen peroxide, sulfur compounds, animal and vegetable oils, Halogens, halocarbons, acid chlorides.

*Hazardous Decomposition or Byproducts:* Hydrogen, magnesium acetylide, and magnesium oxide.

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (polymerization):* None

## SECTION VI - HEALTH HAZARD DATA

Magnesium compounds have variable toxicity. The inhalation of fumes of freshly sublimed magnesium oxide may cause metal fume fever. There is no evidence that magnesium produces true systemic poisoning. Protection necessary for personal handling and processing magnesium is usually no different from that which is necessary for other metals (Sax, Dangerous Properties of Industrial Materials, eighth edition.

*Routes of entry:* Inhalation? Yes      Skin? No      Eyes? No      Ingestion? Yes      Other? No

Signs and symptoms of Overexposure:

*Inhalation:* May cause cough, mucous production, shortness of breath, nausea, malaise, muscular weakness and paralysis, general depression, ataxia, lethargy, hypotension, sensitivity of carotid sinus which can lead to cardiac arrest.

*Ingestion:* May cause gastrointestinal disturbances.

*Skin:* May cause redness, itching, and chemical burns.

*Eye:* May cause redness, itching, burning, and watering.

Health Hazards (Acute and Chronic):

*Inhalation:*

*Acute:* May cause irritation and metal fume fever.

*Chronic:* None recorded.

*Ingestion:*

*Acute:* Poison by ingestion.

*Chronic:* None recorded

*Skin:*

*Acute:* Powdered metal may ignite readily on skin, causing burns. Particles embedded in skin can produce gaseous blebs with a protracted course.

*Chronic:* None recorded

*Eye:*

*Acute:* May cause irritation, redness, and watering.

*Chronic:* None recorded

*Target Organ:* May affect skin and eyes.

*Carcinogenicity:* NTP? No      IARC Monographs? No      OSHA Regulated? No

*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory disorders.

Emergency and First Aid Procedures:

*Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

*Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

*Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist.

*Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE
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*Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII-Control Measures. Isolate spill area, provide ventilation and provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. Use non-sparking tools.

*Waste disposal method:*

Dispose of in accordance with state, local, and federal regulations.

*Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling. Avoid suspension of powder and dust; avoid air and humidity.

SECTION VIII - CONTROL MEASURES
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*Protective Equipment Summary (Hazard Label Information):*

NIOSH/MSHA approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

*Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels.

Mechanical (General): Not Recommended.

*Other:* Handle in controlled environment and in an inert gas such as Argon (Ar)

*Work/Hygienic/Maintenance Practices:*

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established
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