



ALDON CORPORATION

MATERIAL SAFETY DATA SHEET

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MSDS No. MM 20
Effective Date July 9, 1998

SECTION V HEALTH HAZARD DATA

MM 20

Threshold Limited Value None established. (ACGIH 1992-93). Magnesium Oxide Fume: ACGIH TLV (1984) 10 mg/m³ (TWA); OSHA PEL 15 mg/m³ (TWA).

Effects of Overexposure Exposure to magnesium metal or oxide dust should be a low health risk by inhalation and should be treated as a nuisance dust. Exposure to magnesium oxide fume subsequent to burning can result in metal fume fever. The temporary symptoms can include fever, chills, nausea, vomiting and muscular pain. Onset of symptoms occurs 4-12 hours after exposure. **EYES:** May cause burns and corneal abrasions. **SKIN:** Particles of magnesium embedded in the skin may produce lesions that resist healing. **INGESTION:** No problem because of physical properties.

Emergency and First Aid Procedures

EYE CONTACT: Do NOT flush with water. Remove particles with cotton tip applicator. Corneal abrasions are a possibility. Get immediate medical attention. **INHALATION:** Remove to fresh air. If ill effects develop, get medical attention. **SKIN:** Flush thoroughly with water, no effect expected. **INGESTION:** If swallowed, if conscious, induce vomiting and call physician. Never give anything by mouth to an unconscious person.

SECTION VI REACTIVITY DATA

| | | | | |
|------------------|-----------------|---|----------------------------|---|
| Stability | Unstable | | Conditions to Avoid | Dangerous when wet. Avoid exposure to moisture, heat, sparks and flame. |
| | Stable | X | | |

Incompatibility (Materials to Avoid) Magnesium will react with water and acids to release hydrogen; also hazardous with chlorine, bromine, iodine, oxidizing agents and acids.

Hazardous Decomposition Products Hydrogen will be produced - when exposed for long time to water and acids.

| | | | |
|---------------------------------|----------------------------|-----------------------|-----------------|
| Hazardous Polymerization | Conditions to Avoid | | Not applicable. |
| | May Occur | Will Not Occur | |
| | | X | |

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled Recover for use if not contaminated. Do not use water to clean up spill. Use appropriate safety equipment - clean up using non-sparking tools - no smoking or open flames in the area. Avoid dusting. Clean dry product may be returned to dry container and sealed against moisture or place in a suitable container for disposal. Wet or contaminated material should be placed in vented containers and moved to a remote area for disposal by burning.

Waste Disposal Method Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only. Dispose of in an approved incinerator or in an approved chemical landfill or contract with a licensed waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) None needed in normal laboratory handling. If dusty conditions prevail, work in ventilation hood or wear a NIOSH/MSHA-approved dust mask or respirator.

| | | | | |
|--------------------|-----------------------------|-----------|----------------|-----|
| Ventilation | Local Exhaust | If dusty. | Special | No. |
| | Mechanical (General) | If dusty. | Other | No. |

Protective Gloves Fire-resistant. **Eye Protection** Chemical safety glasses, fire glasses.

Other Protective Equipment Wear appropriate fire resistant clothing (e.g., gloves, coveralls, etc.) when exposing magnesium metal to elevated temperatures (950°F) which can cause ignition. Goggles.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing Store at room temperature in a dry place away from other combustibles in a metal cabinet. Avoid direct viewing of magnesium fires as eye injury may result. Ground all handling and transferring operations. Keep container tightly closed when not in use.

Other Precautions Read label on container before using. Do not wear contact lenses when working with chemicals. Wet, moist or high humidity storage conditions will lead to corrosion of the product. Constant clean-up and good housekeeping.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

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| Revision No. 7 | Date 7/9/98 | Approved Michael Raszeja | Chemical Safety Coordinator MR |
|-----------------------|--------------------|---------------------------------|---------------------------------------|

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

| | | | | | | | | | | | | | | | | | | |
|--------------------------|------------------------|--|----------|--------|----------|------|---------|---|---|---|---|---|--------|---|------|---|------------|---|
| Product | MAGNESIUM METAL POWDER |  <p>CHEMTREC 800-424-9300 Day 716-226-6177</p> <p>NFPA HAZARD RATING</p> <table border="1"> <tr> <td>LEAST</td> <td>SLIGHT</td> <td>MODERATE</td> <td>HIGH</td> <td>EXTREME</td> </tr> <tr> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> <p>HMIS *</p> <table border="1"> <tr> <td>Health</td> <td>1</td> </tr> <tr> <td>Fire</td> <td>4</td> </tr> <tr> <td>Reactivity</td> <td>3</td> </tr> </table> | LEAST | SLIGHT | MODERATE | HIGH | EXTREME | 0 | 1 | 2 | 3 | 4 | Health | 1 | Fire | 4 | Reactivity | 3 |
| LEAST | SLIGHT | | MODERATE | HIGH | EXTREME | | | | | | | | | | | | | |
| 0 | 1 | | 2 | 3 | 4 | | | | | | | | | | | | | |
| Health | 1 | | | | | | | | | | | | | | | | | |
| Fire | 4 | | | | | | | | | | | | | | | | | |
| Reactivity | 3 | | | | | | | | | | | | | | | | | |
| Chemical Synonyms | Magnesium Metal | | | | | | | | | | | | | | | | | |
| Formula | Mg | | | | | | | | | | | | | | | | | |
| Unit Size | up to 2.5 Kg. | | | | | | | | | | | | | | | | | |
| C.A.S. No. | 7439-95-4 | | | | | | | | | | | | | | | | | |

SECTION II INGREDIENTS OF MIXTURES

| Principal Component(s) | % | TLV Units |
|------------------------|-------|----------------|
| Magnesium Metal | 99.8% | See Section V. |

DANGER! FLAMMABLE SOLID! KEEP AWAY FROM

SPARKS, OPEN FLAME, ACID AND DAMPNESS.

SECTION III PHYSICAL DATA

| | | | |
|-------------------------------|---|--|--------------------|
| Melting Point (°F) | 1202°F (651°C) | Specific Gravity (H₂O = 1) | 1.74 at 20°C |
| Boiling Point (°F) | 2030°F (1110°C) | Percent Volatile by Volume (%) | Non-volatile (NA). |
| Vapor Pressure (mm Hg) | 1 mm at 621°C | Evaporation Rate (n-Butyl Acet. =1) | Non-volatile (NA). |
| Vapor Density (Air=1) | Data not listed. | | |
| Solubility in Water | Negligible (Decomposes-reacts with water to yield magnesium oxide.) | | |
| Appearance & Odor | Silvery gray metal powder; no odor. | | |

SECTION IV FIRE AND EXPLOSION HAZARD DATA

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|----------------------------------|----------------|--|----|--------------|--------------|
| Flash Point (Method Used) | 1175°F (636°C) | Flammable Limits in Air % by Volume | NA | Lower | Upper |
| | | | | ----- | ----- |

Extinguisher Media Smother with dry graphite, talc, dry sand, G-1 powder, purple K-DO NOT USE WATER. Do NOT use foam, halogenated extinguishing agents, or carbon dioxide.

SPECIAL FIREFIGHTING PROCEDURES Do not use foam, carbon tetrachloride, or carbon dioxide. Manual application of water should be conducted with care to prevent contact with burning or molten magnesium. Protect eyes and skin against flying particles. Avoid direct viewing of magnesium fires as eye injury may result. Firefighters should wear a NIOSH/MSHA-approved self-contained breathing apparatus and protective clothing when appropriate. Wear fire glasses when viewing magnesium flame.

Autoignition Temperature: 510°C (950°F).

UNUSUAL FIRE AND EXPLOSION HAZARDS

Combustible metal. Easily ignited and burns with intense heat and brilliant white flame. Powders form explosive mixtures with air which may be ignited by a spark. In finely divided form, will react with water and acids to release hydrogen; also hazardous in such form with chlorine, bromide, iodine, oxidizing agents and acids.

(1996 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.7, GUIDE PAGE NO. 138)

D.O.T. MAGNESIUM, POWDER, 4.3, UN 1418, PG II

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20