Magnesium AZ31B Alloy

1 PRODUCT AND SUPPLIER IDENTIFICATION

Product Name: Magnesium AZ31B - sheet
Other: Magnesium Alloy

Supplier: Eagle Alloys Corporation
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Talbott, TN 37877
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24 HOUR EMERGENCY ASSISTANCE: CHEMTREC 800-424-9300

Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Not classified as hazardous
GHS Label Elements:
Signal Word: N/A
Hazard Statements: N/A
Precautionary Statements: N/A

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient:	**CAS#**:	**%**:	**EC#**:
Magnesium	7439-95-4	94-97	231-104-6
Aluminum	7429-90-5	2.5-3.5	231-072-3
Zinc	7440-66-6	0.7-1.3	231-175-3
Manganese	7439-96-5	0.2-1.0	231-105-1

4 FIRST AID MEASURES

General Measures: Under normal handling and use, exposure to solid forms of this material present few health hazards. Subsequent operations such as grinding, melting or welding may produce potentially hazardous dust or fumes which can be inhaled or come in contact with the skin or eyes.
INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.
INGESTION: Rinse mouth with water. Do not 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 soap and water. Seek medical attention if symptoms persist.
EYES: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Most Important Symptoms/Effects, Acute and Delayed: See section 11 for more information.
Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

Magnesium AZ31B Alloy SAFETY DATA SHEET

5 FIREFIGHTING MEASURES

Extinguishing Media: Use Class D dry powder extinguishing agent.
Unsuitable Extinguishing Media: Do not use water.
Specific Hazards Arising from the Material: Pieces >3 mm thick are difficult to ignite but possible when heated to near the melting point. May emit fumes of magnesium oxide under fire conditions.
Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Avoid dust formation. Avoid contact with skin and eyes. Avoid breathing dust or fume. Eliminate all sources of ignition. Isolate spill area.
Methods and Materials for Containment and Cleaning Up: Sweep or scoop spilled product and place in a closed container for further handling and disposal. Use non-sparking tools and natural bristle brushes.
Environmental Precautions: Do not allow to enter drains or to be released to the environment.

7 HANDLING AND STORAGE

Precautions for Safe Handling: Avoid creating dusts. Protect against physical damage. Protect from sources of ignition. Avoid contact with skin and eyes. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.
Conditions for Safe Storage, Including Any Incompatibilities: Store in a sealed container. Store in a cool, dry area. Protect from moisture. Do not store together with oxidizers, acids or halogens. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:	**OSHA/PEL**:	**ACGIH/TLV**:
Magnesium	No exposure limit established	No exposure limit established
Aluminum	5 mg/m^3 (respirable)	1 mg/m^3 (respirable)
Zinc	No exposure limit established	No exposure limit established
Manganese	5 mg/m^3	0.2 mg/m^3

Appropriate Engineering Controls: Ensure adequate ventilation to maintain exposures below occupational limits. Use good housekeeping and sanitation practices. Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. 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.
Individual Protection Measures, Such as Personal Protective Equipment:
Respiratory Protection: If permissible levels are exceeded, use NIOSH approved dust respirator.
Eye Protection: Safety glasses
Skin Protection: Wear impermeable gloves, protective work clothing as necessary.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Form: Sheet
Color: Silver-gray metallic
Odor: Not determined
Odor Threshold: Not determined
pH: N/A
Melting Point: ~650 °C
Boiling Point: ~1100 °C
Flash Point: N/A

Evaporation Rate: N/A
Flammability: No data
Upper Flammable Limit: No data
Lower Flammable Limit: No data
Vapor Pressure: No data
Vapor Density: N/A
Relative Density (Specific Gravity): ~1.74 g/cc
Solubility in H_2O: Insoluble
Partition Coefficient (n-octanol/water): Not determined
Autoignition Temperature: No data
Decomposition Temperature: No data
Viscosity: N/A

10 STABILITY AND REACTIVITY

Reactivity: No data
Chemical Stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: May ignite when heated to the melting point.
Conditions to Avoid: No data
Incompatible Materials: Acids, water/moisture, oxidizing agents, halocarbons, halogens, acid chlorides.
Hazardous Decomposition Products: Magnesium oxides.

11 TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin, eyes. Product as shipped does not present an inhalation hazard; however subsequent operations may create dusts or fumes which could be inhaled.
Symptoms of Exposure: Dust may cause irritation to upper respiratory tract, skin or eyes.
Acute and Chronic Effects:
Magnesium: May be irritating to skin, eyes and the respiratory system. Small particles imbedded in skin may cause ulceration which may become infected. Inhalation of excessive concentrations of oxide fume may cause metal fume fever.
Aluminum: There is strong evidence that aluminum (compounds) can cause irritation following exposure via either inhalation or injection. Modest evidence of an effect exists for reproductive toxicity following oral exposure, for neurological toxicity following either oral or injection exposure, and for bone toxicity following injection exposure. All other effects were judged to be supported by either limited evidence or no clear evidence at all.[1]
Zinc: Zinc is an essential trace element and necessary for human health. It is involved in the synthesis and metabolism of nutrients, cell and organ structure and integrity, cell division, immune function and wound healing. Acute ingestion of high amounts of zinc may cause nausea, vomiting, loss of appetite, abdominal cramps, diarrhea and headaches. Chronic ingestion of high amounts may cause copper deficiency, altered iron function and reduced immune function. Inhalation of fumes containing zinc oxide may cause metal fume fever. Symptoms include cough, shortness of breath, sore throat, chest pain, headache and fever.
Manganese: Chronic inhalation exposure of humans to high levels of manganese may result in a syndrome called manganism which typically begins with feelings of weakness and lethargy and progresses to other symptoms such as gait disturbances, clumsiness, tremors, speech disturbances, a mask-like facial expression and psychological disturbances. Manganese is an essential micronutrient in humans.
Acute Toxicity: No data
Carcinogenicity: No components of this alloy have been identified by NTP or IARC as carcinogenic.
To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

12 ECOLOGICAL INFORMATION

Ecotoxicity: No data
Persistence and Degradability: No data

Bioaccumulative Potential: No data
Mobility in Soil: No data
Other Adverse Effects: Do not allow material to be released to the environment. No further relevant information available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Product: Dispose of in accordance with Federal, State and Local regulations.
Packaging: Dispose of in accordance with Federal, State and Local regulations.

14 TRANSPORT INFORMATION

Shipping Regulations: Not regulated
UN Number: N/A
UN Proper Shipping Name: N/A
Transport Hazard Class: N/A
Packing Group: N/A
Marine Pollutant: No

15 REGULATORY INFORMATION

TSCA Listed: All components are listed.
Regulation (EC) No 1272/2008 (CLP): N/A
Canada WHMIS Classification (CPR, SOR/88-66): N/A
HMIS Ratings: **Health**: 0 **Flammability**: 1 **Physical**: 0
NFPA Ratings: **Health**: 0 **Flammability**: 1 **Reactivity**: 1
Chemical Safety Assessment: A chemical safety assessment has not been carried out.

16 OTHER INFORMATION

[1]Krewski et al. (2007) Human Health Risk Assessment for Aluminum, Aluminum Oxide, and Aluminum Hydroxide, http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2782734/

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