

Magnesium

SDS Revision Date: 02/08/2022

1. Identification**1.1. Product identifier****Product Identity** Magnesium; AZ31B**Alternate Names** Magnesium; AZ31B
,MSDS # : 700**1.2. Relevant identified uses of the substance or mixture and uses advised against****Intended use** See Technical Data Sheet.**Application Method** See Technical Data Sheet.**1.3. Details of the supplier of the safety data sheet****Company Name** TW Metals, LLC
707 Eagleview Blvd
Suite 200
Exton, PA 19341**Emergency****CHEMTREC (USA)** (800) 424-9300**2. Hazard(s) identification****2.1. Classification of the substance or mixture**

Flam. Sol. 1;H228 Flammable solid.

Pyr. Sol. 1;H250 Catches fire spontaneously if exposed to air.

WaterReact. 1;H260 In contact with water releases flammable gases which may ignite spontaneously.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

**Danger**

H228 Flammable solid.

H250 Catches fire spontaneously if exposed to air.

H260 In contact with water releases flammable gases which may ignite spontaneously.

Magnesium

SDS Revision Date: 02/08/2022

[Prevention]:

- P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.
- P222 Do not allow contact with air.
- P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
- P231+232 Handle under inert gas. Protect from moisture.
- P240 Ground / bond container and receiving equipment.
- P241 Use explosion-proof electrical / ventilating / light / equipment.
- P280 Wear protective gloves / eye protection / face protection.

[Response]:

- P335+334 Brush off loose particles from skin. Immerse in cool water / wrap in wet bandages.
- P370+378 In case of fire: Use extinguishing media listed in section 5 of SDS for extinction.

[Storage]:

- P402+404 Store in a dry place. Store in a closed container.
- P422 Store contents under dry conditions isolated from halogens, acids and oxidizing materials.

[Disposal]:

- P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Magnesium CAS Number: 0007439-95-4	75 - 100	WaterReact. 1;H260 Pyr. Sol. 1;H250	[1]
Aluminum (Al) CAS Number: 0007429-90-5	1 - 5	Flam. Sol. 1;H228 WaterReact. 2;H261	[1][2]

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

- General** In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.
- Inhalation** Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
- Eyes** Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Magnesium

SDS Revision Date: 02/08/2022

Skin Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview Magnesium alloys in their solid state present no inhalation, ingestion or contact health hazard. However, inhaling dusts, fumes or mists which may be generated during certain manufacturing procedures (melting, welding, sawing, brazing, grinding and machining) may be hazardous to your health. Particulates / dusts may also be irritating to the unprotected skin or eyes.
ACUTE EFFECTS: Excessive exposure to dusts / fumes may cause irritation of eyes, nose or throat. Inhalation of dusts / fumes may result in metal fume fever (metallic taste in mouth, dryness and irritation of throat, chills and fever).
CHRONIC EFFECTS: Prolonged inhalation of fumes or dusts may cause a variety of adverse health effects to the respiratory system, including (but not necessarily limited to) lesions of the mucous membrane, bronchitis, pneumonia and cancers of the nasal cavity and respiratory tract.
POTENTIAL HEALTH EFFECTS/MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Any pre-existing chronic respiratory condition (asthma, chronic bronchitis, emphysema).
ROUTES OF ENTRY: Inhalation (dusts / fumes / mists), Contact with Skin and Eyes (dusts / mists), Ingestion (dusts).
See section 2 for further details.

5. Fire-fighting measures

5.1. Extinguishing media

Smother burning magnesium by covering with an extinguishing powder approved for use on magnesium fires such as G1, MET-LX, inert dry powders (e.g., graphite, limestone, salt), etc. Do not use water, foam, halogenated agents or carbon dioxide

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Hydrogen gas.

Keep away from heat / sparks / open flames / hot surfaces - No smoking.

Do not allow contact with air.

Keep away from any possible contact with water, because of violent reaction and possible flash fire.

Handle under inert gas. Protect from moisture.

Ground / bond container and receiving equipment.

Use explosion-proof electrical / ventilating / light / equipment.

5.3. Advice for fire-fighters

When heated in air to a temperature near its melting point, Magnesium alloys ignite and burn with a white flame. Use of water on burning magnesium will produce hydrogen gas and may cause an explosion.

Wear positive pressure self-contained breathing apparatus.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Magnesium

SDS Revision Date: 02/08/2022

Put on appropriate personal protective equipment (see section 8).

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

No special procedures needed.

7. Handling and storage

7.1. Precautions for safe handling

Minimize activities which may generate dusts, mists or fumes. Keep areas well ventilated. Use suitable equipment to move materials.

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Handle containers carefully to prevent damage and spillage.

Store products in a dry location. See National Fire Protection Association bulletins - NFPA 480, "Storage, Handling and Processing of Magnesium".

Incompatible materials: Acid, Water. Reacts with acid to form Hydrogen gas. In finely divided form, will react with water or acids to release Hydrogen.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0007429-90-5	Aluminum (Al)	OSHA	TWA 15 mg/m3 (total) TWA 5 mg/m3 (resp)
		ACGIH	TWA: 1.0 mg/m3 Revised 2008,
		NIOSH	TWA 10 mg/m3 (total) TWA 5 mg/m3 (resp)
		Supplier	No Established Limit
13009-48-4	Magnesium oxide	OSHA	TWA 15 (total)
		ACGIH	TWA 10 (inhalable)
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
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Magnesium

SDS Revision Date: 02/08/2022

0007429-90-5	Aluminum (Al)	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007439-95-4	Magnesium	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		ACGIH	A4 – Not Classifiable as a Human Carcinogen.
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory	In dusty atmospheres use an approved dust respirator.
Eyes	Face shields (welding or burning), Safety glasses (cutting or grinding).
Skin	Use appropriate protective clothing for the process being performed
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Silver Solid
Odor	Odorless
Odor threshold	Not determined
pH	Not Measured
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	NA
Flash Point	Nonflammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Solid
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	NA
Vapor Density	NA
Specific Gravity	1.77
Solubility in Water	Insoluble
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	NA
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured

Magnesium

SDS Revision Date: 02/08/2022

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Acid, Water. Reacts with acid to form Hydrogen gas. In finely divided form, will react with water or acids to release Hydrogen.

10.6. Hazardous decomposition products

Hydrogen gas.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Magnesium - (7439-95-4)	No data available	No data available	No data available	No data available	No data available
Aluminum (Al) - (7429-90-5)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable

Magnesium

SDS Revision Date: 02/08/2022

Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

Toxic to aquatic life

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Magnesium - (7439-95-4)	Not Available	Not Available	Not Available
Aluminum (Al) - (7429-90-5)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

Magnesium

SDS Revision Date: 02/08/2022

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	DOT Hazard Class: Not Applicable	IMDG: Not Applicable Sub Class: Not Applicable	Air Class: Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable
14.5. Environmental hazards			
IMDG	Marine Pollutant: Yes;		
14.6. Special precautions for user	No further information		

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.
WHMIS Classification	F
US EPA Tier II Hazards	<p>Fire: Yes</p> <p>Sudden Release of Pressure: No</p> <p>Reactive: Yes</p> <p>Immediate (Acute): No</p> <p>Delayed (Chronic): No</p>

EPCRA 311/312 Chemicals and RQs:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

Aluminum (Al)

New Jersey RTK Substances (>1%):

Aluminum (Al)

Magnesium

Pennsylvania RTK Substances (>1%):

Aluminum (Al)

Magnesium

Magnesium

SDS Revision Date: 02/08/2022

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H228 Flammable solid.

H250 Catches fire spontaneously if exposed to air.

H260 In contact with water releases flammable gases which may ignite spontaneously.

H261 In contact with water releases flammable gases.

The information contained herein is furnished without warranty of any kind. The above information is believed to be correct but does not purport to be all inclusive and should be used only as a guide. Users should make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

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