

## Material Safety Data Sheet (MSDS) – Magnesium Anodes

### Article I: Material Description

*Common Name:* Magnesium (anodes)  
*Chemical Name:* Mg  
*CAS No.:* 7439-95-4  
*EC No.:* 231-104-6  
*Use:* Cathodic Protection  
*NFPA Rating:* 0-1-2-W

### Article II: Physical Data

*Boiling Point:* 2030 °F  
*Melting Point:* 1176-1200 °F  
*Specific Gravity:* 1.75 (H<sub>2</sub>O = 1)  
*Density:* 1.65-1.74 g/cm<sup>3</sup>  
*Vapor Density Air:* NA  
*Vapor Pressure:* NA  
*Solubility in Water:* NA  
*Appearance:* Silver or grey solid  
*Odor:* None  
*Evaporation Rate:* NA  
*Percent Volatile by Volume:* NA

### Article III: Fire and Explosion Hazard Data

*Flash Point:* NA  
*Auto-Ignition Temperature:* 1202 °F (648 °C)  
*Flammable Limits:* NA  
*LEL:* NA  
*UEL:* NA

- Very finely divided, magnesium can be ignited at air temperatures below 800 °F (482 °C)

*Extinguishing Media:* Smother burning magnesium by covering with a metal extinguishing powder approved for use on magnesium fires such as G1 and MET-L-X.

*Unusual Fire and Explosion Hazards:* When heated in air to a temperature near its melting point, magnesium alloys ignite and burn with a white flame. Use of water on molten magnesium will produce hydrogen gas and may cause explosion.

*Protective Fire-Fighting Equipment:* Wear positive pressure self-contained breathing apparatus. Smother fires with dry graphite or other suitable dry powders. Do not use foam, halogenated extinguishing agents, or carbon dioxide. Protect eyes and skin against flying particles.

**Article IV: Environmental and Disposal Information**

*Action to take for spills and leaks:* Clean off and reuse. RCRA hazardous waste No. not federally regulated.

**Article V: Reactivity Data**

*Stability:* Stable. Reacts violently with halogens, chlorinated solvents, chloromethane. Air and moisture sensitive. Highly flammable.

*Incompatibility (Materials to avoid):* Acid and water. Magnesium reacts with acid or water to form hydrogen gas. If finely divided, its propensity to react and the reaction rate will increase.

*Hazardous Decomposition Products:* None under normal use or storage. See incompatibility statement above and fire and explosion hazard data in Article III for special situations.

*Hazardous Polymerization:* Will not occur.

**Article VI: Health Hazard Data**

*Eye:* Mechanical injury only

*Skin absorption:* Skin absorption is unlikely due to physical properties.

*Skin contact:* Mechanical injury only

*Ingestion:* Ingestion is unlikely due to physical state. If dusts are produced, amounts ingested incidental to industrial handling are not likely to cause injury; however, ingestion of larger amounts could cause serious injury or even death (acute oral toxicity of magnesium is considered moderate).

*Inhalation:* Dust may cause irritation to upper respiratory tract.

*Systematic & Other Effects:* Based on available data, repeated exposures are not anticipated to cause any significant adverse effects.

**Article VII: First Aid**

*Eyes:* Irrigate immediately with water for at least five minutes.

*Skin:* Wash off dust in flowing water or shower

*Ingestion:* Induce vomiting if large amounts of dust are ingested. Search for immediate medical attention.

*Inhalation:* Remove to fresh air if dust inhalation effects occur. Consult a physician.

- Note to Physician: No specific antidote for dust inhalation. Treatment based on judgment of the physician in response to reactions of the patient.

**Article VIII: Hazardous Ingredients and Occupational Exposure Limits**

Ingredient	CAS#	OSHA-PEL		ACGIH-TLV		Typical %
		TWA *A	STEL *A	TWA *A	STEL *A	
<u>Magnesium</u>	7439-95-4 Fume / Dust	10A / (5A Resp)	-	10A	-	85 - 99
<u>Aluminum</u>	7429-90-5 Fume / Dust	5A / 15A (5A Resp)	-	5A / 10A (5A Resp)	-	0 - 20
<u>Zinc</u>	7440-88-6 Fume	5A	10A	5A	10A	0 - 5

- SARA SECTION 313: If the above ingredients are underlined, they are listed in 40 CFR 372.65 Superfund Amendments and Reauthorization Act (SARA) Section 313, and are present in quantity greater than the "de minimua" concentration. Therefore, those underlined ingredients are subject to the reporting requirements of SARA Section 313.

**Article IX: Protection and Precautions**

*Eye and Skin Protection:* Under normal conditions, no protective clothing is required. Use eye protection when grinding or cutting metal to prevent chips or fines from getting into eyes.

*Respiratory Protection:* Use with adequate ventilation to meet exposure limits as listed in Article VIII. Where exposure limit is or may be exceeded use NIOSH approved respiratory protection respirator for dust or fumes based on actual or potential airborne contaminants and their concentrations present.

**Article X: Regulatory Information**

*Notice:* The information herein is presented in good faith and believed to be accurate as of the issued date shown above. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its use complies with all federal, state and local laws and regulations.