



Material Safety Data Sheet

1. Product Identification					
Product name:		Magnesium Alloy Ingot AZ91D			
Manufacturer name: Magnesium Refining Technologies, Inc. County Road 177 Bellevue, Ohio 44811 Phone – (419) 483-9199 / Fax – (419) 483-8411 URL: www.magretechinc.com			Distributor name: Magnesium Refining Technologies, Inc. County Road 177 Bellevue, Ohio 44811 Phone – (419) 483-9199 / Fax – (419) 483-8411 URL: www.magretechinc.com		
2. Composition / information on ingredients					
Chemical Component	CAS #	Weight %	TWA (mg/m ³)	STEL (mg/m ³)	Remarks
Aluminum	7429-90-5	9%*	10	---	*approximate
Zinc	7440-66-6	0.6%*	2	---	*approximate
Manganese	7439-96-5	0.4%*	1	---	*approximate
Magnesium	7439-95-4	Balance	10	---	
3. Hazards Identification					
Human: Eye: Mechanical Injury. / Skin: n/a / Ingestion: n/a / Inhalation: dust may cause irritation.					
Environment: Solid: n/a / Dust: general ventilation. / Machined: turnings, chips must be kept dry.					
4. First aid treatment					
General: Can cause eye and skin irritation. / Inhalation of dust or fume may cause irritation.					
Inhalation (dust/fume): Remove from exposure to fresh air immediately. If respiratory problems develop, get medical aid as soon as possible.					
Skin contact (dust): Immediately wash skin with plenty of water for at least 20 minutes. Removed contaminated clothing and wash before reuse.					
Eye contact (dust/chips): Immediately flush eyes with plenty of water for at least 20 minutes, lifting lids occasionally. An eyewash station should be available in the work area.					
5. Fire fighting measures					
Extinguishing agent: Use dry sand, Met-L-X powder, road salt or Flux M-130. DO NOT USE WATER because this will generate flammable hydrogen gas and heat.					



6. Accidental release measures
Personal protection: Ingot Form: Standard PPE (glasses, gloves, steel toe shoe, hard hat as necessary). During smelting, high heat protection, aluminized gear, etc. must be used.
Environmental precaution: Ingot Form: No significant environmental concerns in this form. Keep dry to avoid oxidation of product. Machine Turnings: Magnesium reacts with acid to form hydrogen gas and irritating fume and heat. In the presence of water only, flammable hydrogen gas and heat will be generated.
Clean up procedure: Always wear personal protection equipment. Recover dry product for recycling. In finely divided form reaction with water is exothermic and hydrogen gas will be produced, ammonia may also be produced. Spillage should be removed when dry and kept in a clean and dry container. Container should be watertight but if water or moisture is present, ventilate container and store outside, in order to avoid any hydrogen accumulation.
7. Handling and Storage
Handling: Minimize dust generation and accumulation. With dust or fines avoid contact with eyes, skin and clothing. Avoid inhalation and ingestion. Do not allow contact with water.
Storage: Store in a dry and cool place. Keep away from water and incompatible substances. If exposed to moisture ingot products may develop oxidation or other cosmetic damage. Machine turnings or fines may generate hydrogen and/or ammonia and heat when exposed to moisture.
8. Exposure controls / Personal protection
Ventilation: Use adequate locale or general ventilation. Do not use recirculating ventilation system.
Control parameters and method: In the work place, magnesium or magnesium alloy products should be preheated to a minimum temperature of 300F (149C) to eliminate moisture prior to use in any melting operation. Water, in any form, if added to molten metal, will quickly generate steam and hydrogen and may cause an explosion. If operations involving this product, such as machining, produce fines, such as dust, powder, chips, or turnings proper measures should be taken to prevent dust clouds around these operations. These fines should be collected frequently and should be stored and disposed of in accordance with NFPA guidelines.
Personal protection equipment: Ingot Form: Standard PPE (glasses, gloves, steel toe shoe, hard hat as necessary). Generation of excessive amounts of dust may require use of respiratory protection. Melting operations: Full-body covering flame retardant clothing, hardhat, face shield, side-shield safety glasses, flame retardant gloves, and steel-toed boots should be used.



9. Physical and Chemical Properties	
Appearance, color, odor: Solid, silver. May turn grey over time with oxidation. None to mild ammonia odor.	
Boiling point:	1107 ⁰ C (2025 ⁰ F)
Melting point:	470 ⁰ C-595 ⁰ C (875-1105 ⁰ F)
Density:	1.82 (g/cm ³)
Solubility in Water:	not applicable
Vapor pressure:	0.13 at melting temp. (approx.)
Molecular Weight:	24.3
Specific Gravity:	1.81 (approx.)
Auto-ignition temperature:	not available
Lower flammable limit:	not applicable
Upper flammable limit:	not applicable
Other data: Stable in ingot form. Product is highly hygroscopic, very reactive with water or moisture <u>in finely divided state</u> . Hydrogen, ammonia and heat may be produced.	
10. Stability and Reactivity	
General: Ingot Form: Stable. Will not react violently with moisture, but cosmetic changes, such as oxidation may occur. Molten State: Avoid contact with moisture. An explosion could occur. Machine Turnings: Product is highly hygroscopic, very reactive with water or moisture in finely divided state. Hydrogen, ammonia and heat may be produced. Stable when dry.	
Condition to avoid: Incompatible materials, dust generation, contact with water and moisture.	
Incompatibilities with other materials: Water, acid and oxidizing agents.	
11. Toxicology Information	
No LD50/LC50 information found relating to normal routes of occupational exposure. -----\Cancer Lists\----- -----NTP Carcinogen-----	
Ingredient	Known Anticipated IARC Category
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Magnesium Metal (7439-95-4)	No No None
12. Ecological Information	
Ecological effect (general): Ingot Form: No significant ecological impact. Machine Turnings: In large quantities could produce ammonia in water, which would be harmful to marine life.	



13. Disposal

General:

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

Safe disposal method:

Avoid contact with water. Magnesium products can be reclaimed by magnesium recyclers.

14. Transport

Ingot Form: Magnesium Alloy. Non-Hazmat. Does not meet D.O.T. specified "50 percent magnesium in pellets turnings or ribbons." per 49CFR 172.101. Other forms may be hazmat.

15. Regulation

TSCA: CAS# 7439-95-4 is listed on the TSCA Inventory.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: **Not to have met any hazard categories in ingot form.**

In other forms, material should be evaluated for the following categories: Magnesium Metal CAS # 7439-95-4: acute, flammable, reactive.

16. Other Information

NFPA Rating

Health: 0

Fire: 1

Reactivity: 1

Special Hazard: Use No Water -W-

Guidance:

This document is prepared to the pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Disclaimer:

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