

1. Product and Company Identification

Product name: Aluminum metal X319.X series alloys

Synonym(s): 319.0, 319.1, 319.2, A319.0, A319.1, B319.0, B319.1

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2. Hazards Identification

Not hazardous in solid form. Fines and/or particles from processing may be readily ignitable. Fine particles and molten metal are highly reactive with water, oxidizers, acids and alkalis, halogenated compounds and certain metal oxides.

3. Composition and Ingredients

Designation	C.A.S.No.	EC number	Content (%)
Aluminum (Al)	7429-90-5	231-072-3	82 - 91
Iron (Fe)	7439-89-6	231-096-4	0.6 - 1.2
Silicon (Si)	7440-21-3	231-130-8	5.5 - 6.5
Copper (Cu)	7440-50-8	231-159-6	3.0 - 4.0
Zinc (Zn)	7440-66-6	231-158-0	1.0 - 3.0
Magnesium (Mg)	7439-95-4	231-104-6	0.10 - 0.50
Titanium (Ti)	7440-32-6	231-142-3	0.00 - 0.25
Manganese (Mn)	7439-96-6	231-105-1	0.00 - 0.50
Chromium (Cr)	7440-47-3	231-157-5	0.00 - 0.35
Nickel (Ni)	7440-02-0	236-669-2	0.00 - 0.50

4. First Aid Response

Inhalation of dust: In case of discomfort, remove to a ventilated area. If discomfort persists, consult a physician.

Skin contact: In case of burns with hot metal, rinse with cold water. If burn is severe, consult a physician.

Eyes contact: Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.

Ingestion: Not applicable.

5. Fire and Explosion Data

In solid form there is no fire or explosion hazard.
Never put water on molten metal. This will cause explosion.

Extinguishing Media: Suspensions of aluminum dust in air may pose a burn or severe explosion hazard, especially in a confined atmosphere. Avoid sparks and prevent electrostatic charges from accumulating. In the case of aluminum fires, use a Class D dry-powder extinguisher. Do not use water, moist sand or halogenated extinguishing media.

6. Accidental Release Measures

Small or large molten spill: Contain the flow using DRY sand or salt flux as a dam. Do not use shovels or other hand tools to halt the flow of molten aluminum. Allow to cool entirely before handling.

Solid form (scrap): Recycle product if possible.

7. Handling and Storage

Storage: Product should be kept dry. Cracks or cavities, if present, should be pointed downwards to avoid moisture entrapment.

Handling precautions: Avoid contact with sharp edges or heated metal. Hot and cold aluminum are not visually different and will not present a warning color change. Exercise caution since metal may be hot.

8. Exposure Controls and Personal Protection

Personal Protection: Special ventilation should be used to remove finely divided metallic dust in order to eliminate explosion hazards.

Dust concentration in ventilation ducts should be below the lower explosive limit of 40 g/m³

Use an approved respirator designed for the hazard where concentrations exceed exposure limits.

EXPOSURE LIMITS

Designation	C.A.S.No.	ACGIH TWA/TLV	OSHA PEL TWA
Aluminum	7429-90-5	10 mg/m ³	5 mg/m ³
Iron oxide fume	1309-37-1	1 mg/m ³	1 mg/m ³
Silicon	7440-21-3	N/A	5 mg/m ³
Copper	7440-50-8	1.0 mg/m ³	1.0 mg/m ³
Zinc oxide	1314-13-2	2 mg/m ³	5 mg/m ³
Magnesium oxide	1309-48-4	10 mg/m ³	15 mg/m ³
Titanium	7440-32-6	N/A	N/A
Manganese	7439-96-6	0.2 mg/m ³	N/A
Chromium	7440-47-3	0.5 mg/m ³	1.0 mg/m ³
Nickel	7440-02-0	1.5 mg/m ³	1 mg/m ³

9. Physical Properties

Appearance:	Gray to silver. Odorless.	Specific gravity:	2.7
Melting point:	1,050-1,220°F	pH:	N/A
Boiling point:	3,733°F	Flash point:	N/A
Vapor pressure:	N/A	NFPA fire code:	0
Vapor density:	N/A	Oxidizing prop.:	N/A
Water solubility:	N/A	Explosive prop.:	N/A
Evaporation rate:	N/A		

10. Stability and reactivity

Metal is stable and non-reactive under normal condition of use, storage and transport.

Molten aluminum may explode on contact with water particularly if water is entrapped.

Heat generation and release of flammable hydrogen gas may occur when fines, chips or dust are mixed with halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate.

11. Toxicological Information

Aluminum in solid form does not present any acute health effects

Alloys may contain chromium. Chromium and its compounds, particularly hexavalent chromium, are listed in the annual report on carcinogens prepared by the National Toxicology Program (NTP). Alloy does not contain any carcinogen or potential carcinogen.

ACUTE EFFECTS

CAS	Designation	LD ₅₀ (oral rat)	LC ₅₀
7439-89-6	Iron	30 g/kg	unknown
7440-21-3	Silicon	3160 mg/kg	unknown
7439-96-6	Manganese	9000 mg/kg	unknown
7440-02-0	Nickel	250 mg/kg	unknown

12. Ecological Information

Ecotoxicity: Has not been demonstrated using standard OECD protocol.

Mobility: Aluminum is not mobile in the environment unless contact is made with an aqueous environment with a pH below 5.5 or above 8.5.

Biodegradability: Not relevant for metals.

13. Disposal Methods

Reuse or recycle material wherever possible.

Material may be disposed of at an industrial landfill. Dispose of waste in accordance with local, state and federal regulations.

14. Transport Information

CFR 49: Code of Federal Regulations (USA) Not regulated

TGDR: Transport of Dangerous Goods Regs. (Canada) Not regulated

ADR: EU agreement for international transport by road. Not regulated

IMO: International Maritime Organization Not regulated

ICAO: International Civil Aviation Organization Not regulated

IATA: International Air transport Association Not regulated

15. Regulatory Information

USA Regulation(s): **Section 313:** Product may contain trace amounts of the following chemical(s) subject to the requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA Title III of SARA) and of 40 CFR 372.

Chemical Name	CAS
Chromium	7440-47-3
Copper	7440-50-8

Canadian Regulation: WHMIS Classification: D2B Toxic material causing other toxic effects.

EU Classifications: Warning Symbol(s): None

Risk Phrase(s): None

Safety Phrase(s): None

16. Other Information

The information in this Safety Data Sheet was obtained from sources believed to be reliable, but it is not guaranteed. This information may be used in a manner which is beyond our knowledge and/or control. Therefore, this information is provided for advice only, with no representation of warranty, either express or implied.

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MATERIAL SAFETY DATA SHEET

PRODUCT NAME: MAGNESIUM INGOT, ALLOY

Effective Date: 02/25/85

Date Printed 2/8/90

Product Code: 57170

INGREDIENTS:

Magnesium	Case# 7439-95-4	84.0% - 96.0%	OSHA: None; ACGIH: None
Zinc	Case# 7440-66-6	0.0 - 12.0%	OSHA: None; ACGIH: None
Aluminum	Case# 7419-90-5	0.0 - 9.5%	OSHA: None; ACGIH: 10mg/M3
Beryllium	Case# 7439-96-5	0.0 - 100ppm	OSHA: .002(TWA) ACGIH .002(TWA) .005 (Ceiling) .025 (Peak)
Manganese, min.		0.13%	OSHA: (C)5mg/M3 ACGIH: (C)5mg/M3 (Dust) 1mg/M3 (Fume)

PHYSICAL/DATA

Boiling Point: Not Applicable
Vap Press: Not applicable
Vap Density: Not applicable
Sol. in Water: Not applicable

Sp. Gravity: 1.81
Melting Point: 875°F minimum
Appearance: Silver Solid
Odor: None

FIRE AND EXPLOSION HAZARD DATA

Flash Point: None

Method Used: Not Applicable

Flammable Limits: LFL: Not Applicable

UFL: Not Applicable

Extinguishing Media: Melting flux, dry sand, metal extinguishing powders such as G1, Met-L-X, etc.

FIRE & EXPLOSION HAZARDS: When heated in air to a temperature near its melting point, magnesium ignites and burns with a white flame. Use of water on molten magnesium will produce hydrogen gas and may cause an explosion.

FIRE-FIGHTING EQUIPMENT: Wear positive pressure self-contained breathing apparatus

REACTIVITY DATA

STABILITY: (CONDITIONS TO AVOID) Stable under normal conditions, See incompatibility statement.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Acid, water. Reacts with acid to form hydrogen gas. In finely divided form, will react with water and acids to release hydrogen.

HAZARDOUS DECOMPOSITION PRODUCTS: None under normal use or storage. See incompatibility statement and fire and explosion hazard data, for special situations.

HAZARDOUS POLYMERIZATION: Will not occur

Foundry