

Alloy 6063

1. Description of Alloy

Alloy 6063 is most common alloy extensively used in the aluminium extrusion Industry. Its excellent extrudability and mechanical properties allows to produce thin-walled hollow shapes, intricate solids that are usually difficult to extrude with satisfactory finish. It responds well to polishing, anodizing, chemical brightening and colouring.

2. Health Hazard

- For skin contact, remove particles by thoroughly washing with soap and water.
- For eye contact, flush with water for at least 15 minutes. Get medical attention if irritation persists.
- For inhalation, remove from exposure. Get medical attention if experiencing breathing difficulty.

3. Chemical Composition

Alloy 6063 is a heat-treatable aluminium magnesium silicone alloy

Composition									
Element	(	Fe	Cu	Mn	Mg	Cr	Zn	+	Al.
CAS No.	7440-21-3	7439-89-6	7440-50-8	7439-96-5	7439-95-4	7440-47-3	7440-66-6	7440--32-6	7429-90-5
% weight	0.20-0.6	0.35	0.10	0.10	0.45-0.9	0.10	0.10	0.10	97.65-98.50

4. First Aid Measures

Eye contact: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

Skin contact: Wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists. Consult a physician.

Inhalation: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. Provide cardiopulmonary resuscitation for persons without pulse or respiration. Consult a physician.

Ingestion: If swallowed, dilute by drinking large amounts of water. Consult a physician.

5. Fire & Explosion Data

The product is solid and chemically stable, firefighting measure is not applicable.

6. Accidental Release Measures

No spill or leaks.

Waste Disposal Methods: Used or Unused product or by-products from various processing or treatment should be tested to determine hazard status and disposal requirements under federal, state or local laws and regulations.

7. Handling and Storage

Handling:

Avoid contact with skin and eyes.

Avoid generating dust. Keep material dry.

Wear protective gloves to prevent possible cut wound due to sharp edge of product.

Storage:

Store aluminum alloy in dry, heated areas with any cracks or cavities pointed downward.

Avoid water leakage from any sources.

8. Exposure Control / Special Protection Information

Appropriate personal protective equipment is required when melting, welding, casting, machining, forging, or otherwise processing. The nature of the processing activity will determine what form of equipment is necessary, i.e., glasses, respirator, protective clothing, and ear protection.

Protective Gloves: As needed.

Eye Protection: Eye glasses or goggles are needed.

9. Physical Properties

Form	Solid
Color	Silvery
Odor	None
Density	2.71 x 10 ³ kg/M ³
Melting Range	600-650°&
Specific Heat between 0-100°&	879 J/kg
Coefficient of Linear Expansion between 20-200°&	23 x 10 ⁻⁶ °&
Thermal Conductivity at 100°&	201 W/m
Electrical Resistivity at 20°&	0.033 μΩ m
Modulus of Elasticity	69 x 10 ⁹ MPA

10. Chemical Stability & Reactivity Data

Stable under normal conditions of use, storage, and transportation.

Molten aluminum can react violently with water, rust, certain metal oxides (e.g., oxides of copper, iron, and lead), and nitrates (e.g., ammonium nitrate and fertilizers containing ammonium nitrate).

11. Toxicological Information

Health Effects of Ingredients

A: General Product Information: No information available for product.

B: Component Analysis - LD50/LC50

Magnesium (7439-95-4)

Oral LD50 Rat: 230 mg/kg

Carcinogenicity

A: General Product Information: No information available for product.

B: Component Carcinogenicity: None of this product's components are listed by ACGIH, IARC, or NTP.

12. Ecological Information**Ecotoxicity**

A: General Product Information: No information available for product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

No ecotoxicity data was found for this product's components.

Environmental Fate: No information available for product.

13. Disposal Considerations**Disposal Instructions**

Reuse or recycle material whenever possible. Material may be disposed of at an industrial landfill.

US EPA Waste Number & Descriptions

A: General Product Information

RCRA Status: Must be determined at time material is disposed. If material is disposed as waste, it must be characterized under RCRA according to 40 CFR, Part 261, or state equivalent in the U.S.

B: Component Waste Numbers

RCRA waste codes other than described under Section A may apply depending on use of product. Refer to 40 CFR 261 or state equivalent in the U.S.

14. Transportation Information**Special Transportation**

	PSN #1	PSN #2	PSN #3	PSN #4
Notes:	#			
Proper Shipping Name:	Not regulated			
Hazard Class:	-			
UN NA Number:	-			
Packing Group:	-			
RQ:	-			
Other - Tech Name:	-			
Other - Marine Pollutant:	-			

Notes:

(1) When "Not regulated", enter the proper freight classification, "MSDS Number" and "Product Name" on the shipping paper work.

Canadian TDG Hazard Class & PIN: Not regulated

15. Regulatory Informations**US Federal Regulations**

A: General Product Information

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

All electrical equipment must be suitable for use in hazardous atmospheres involving aluminum powder in accordance with 29 CFR 1910.307. The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installation that will meet this requirement.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Aluminum (7429-90-5)

SARA 313: 1.0 % de minimis concentration (dust or fume only)

SARA 311/312 Physical and Health Hazard Categories:

Immediate (acute) Health Hazard: Yes, if particulates/fumes generated during processing.

Delayed (chronic) Health Hazard: Yes, if particulates/fumes generated during processing.

Fire Hazard: No

Sudden Release of Pressure: No

Reactive: Yes, if molten

State Regulations

A: General Product Information: No information available for product.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Aluminum	7429-90-5	Yes	No	Yes	Yes	Yes	Yes
Magnesium	7439-95-4	Yes	No	Yes	No	Yes	Yes

Other Regulations

A: General Product Information: No information available for product.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Aluminum	7429-90-5	1.00%

C: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS	AUST	MITI
Aluminum	7429-90-5	Yes	Yes	Yes	Yes	No
Magnesium	7439-95-4	Yes	Yes	Yes	Yes	No

16. Other Information**MSDS History**

Original: July 13, 1995

Revised: November 4, 2015

MSDS Status

11/04/2015: Additional Information Section 11, 12, 13, 14, 15, 16

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Other Information

- * Aluminum Association's Bulletin F-1, "Guidelines for Handling Aluminum Fines Generated During Various Aluminum Fabricating Operations." The Aluminum Association, 900 19th Street, N.W., Washington, DC 20006.
- * Aluminum Association, "Guidelines for Handling Molten Aluminum, The Aluminum Association, 900 19th Street, N.W., Washington, DC 20006.
- * NFPA 65, Standard for Processing and Finishing of Aluminum (NFPA phone: 800-344-3555)
- * NFPA 651, Standard for Manufacture of Aluminum and Magnesium Powder
- * NFPA 70, Standard for National Electrical Code (Electrical Equipment, Grounding and Bonding)
- * NFPA 77, Standard for Static Electricity
- * Guide to Occupational Exposure Values-2005, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
- * Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition, 1991, Compiled by the American Conference of Governmental Industrial Hygienists, Inc. (ACGIH).
- * NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, February 2004.
- * Patty's Industrial Hygiene and Toxicology: Volume II: Toxicology, 4th ed., 1994, Patty, F. A.; edited by Clayton, G. D. and Clayton, F. E.: New York: John Wiley & Sons, Inc.
- * expub, www.expub.com, Expert Publishing, LLC.

Key-Legend:

ACGIH American Conference of Governmental Industrial Hygienists
AICS Australian Inventory of Chemical Substances
CAS Chemical Abstract Service
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
CFR Code of Federal Regulations
CPR Cardio-pulmonary Resuscitation
DOT Department of Transportation
DSL Domestic Substances List (Canada)
EC Effective Concentration
ED Effective Dose
EINECS European Inventory of Existing Commercial Chemical Substances
EPA Environmental Protection Act
IARC International Agency for Research on Cancer
LC₅₀ Lethal concentration (50 percent kill)
LC_{Lo} Lowest published lethal concentration
+0₅₀ Lethal dose (50 percent kill)
+0_{Lo} Lowest published lethal dose
LFL Lower Flammable Limit
MITI Ministry of International Trade & Industry
NFPA National Fire Protection Association
NIOSH National Institute for Occupational Safety and Health
NTP National Toxicology Program
OEL Occupational Exposure Limit
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
PIN Product Identification Number
PSN Proper Shipping Name
RCRA Resource Conservation and Recovery Act
SARA Superfund Amendments and Reauthorization Act
STEL Short Term Exposure Limit
TCLP Toxic Chemicals Leachate Program
TDG Transportation of Dangerous Goods
TLV Threshold Limit Value
TSCA Toxic Substance Control Act
TWA Time Weighted Average
UFL Upper Flammable Limit
WHMIS Workplace Hazardous Materials Information System
atm atmosphere
cm centimeter
g, gm gram
in inch
kg kilogram
lb pound
m meter
mg milligram
ml, ML milliliter
mm millimeter
mppcf million particles per cubic foot
n.o.s. not otherwise specified
ppb parts per billion
ppm parts per million
psia pounds per square inch absolute
u micron
ug microgram

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