MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name: Aluminum Casting Alloy, 771.2 series alloy

Supplier: Boose Aluminum Foundry Co., Inc.
PO Box 261
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2. Hazards Identification

Emergency Overview

WARNING! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR (DURING PROCESSING)

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

Solid aluminum does not present any acute or chronic health effects.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

3. Composition / Information on Ingredients

MATERIAL	FORMULA	CAS NO#	PERCENT BY WEIGHT
Aluminum	Al	7429-90-5	>90.0%
Zinc	Zn	7440-66-6	5.0-8.0%
Iron	Fe	7439-89-6	0.1-1.0%
Copper	Cu	7440-50-8	0.1-1.0%
Magnesium	Mg	7439-95-4	0.5-1.5%
Manganese	Mn	7439-96-5	0.1-1.0%
Silicon	Si	7440-21-3	0.1-1.0%
Titanium	Ti	7440-32-6	0.1-0.25%
Chromium	Cr	7440-47-3	<0.3%

4. First Aid Measures

Inhalation: 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 plenty of cold water. If burn is severe, consult a physician.

Eyes Contact: Flush eyes with copious amount of water to remove particles. If discomfort continues, consult a physician.

Ingestion: Ingestion of significant amounts of material is unlikely. If large quantities of material are ingested, consult a physician.

5. Fire Fighting Measures

Extinguishing Media:

In case of aluminum fires, use a Class D dry-powder extinguisher. Do not use water or halogenated extinguishing media.

Unusual Fire and Explosion Hazards:

Not a fire hazard unless in particle form (small chips, fine turnings, dusts). Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
NEVER PUT WATER ON MOLTEN METAL – IT WILL EXPLODE.

6. Accidental Release Measures

No special precautions are necessary for spills of bulk material. Wear gloves to prevent metal cuts.

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

Non-sparking tools should be used.

7. Handling and Storage

Minimize dust generation and accumulation.

Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

8. Exposure Controls / Personal Protection

Exposure Guidelines:

MATERIAL	DESCRIPTION	OSHA		ACGIH		UNIT
		TWA	STEL	TWA	STEL	
Aluminum	Total dust Respirable dust	15 5	NONE	10	NONE	mg/m^3
Zinc		NONE	NONE	NONE	NONE	mg/m^3
Iron		NONE	NONE	NONE	NONE	mg/m^3
Copper	Fume Dust	0.1 1.0	NONE	0.2 1.0	NONE	mg/m^3
Magnesium		NONE	NONE	NONE	NONE	mg/m^3
Manganese	Ceiling	5	NONE	0.2	NONE	mg/m^3
Silicon	Total dust Respirable dust	15 5	NONE	10	NONE	mg/m^3
Titanium		NONE	NONE	NONE	NONE	mg/m^3
Chromium		1	NONE	0.5	NONE	mg/m^3

Exposure Controls / Personal Protection:

Special ventilation should be used to convey finely divided metallic dust generated by grinding, sawing or polishing operations, in order to eliminate explosion hazards. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment.

Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

Use only appropriately classified electrical equipment and powered industrial trucks.

9. Physical / Chemical Characteristics

Boiling Point: Not applicable

Vapor Pressure (mm Hg): Not applicable

Vapor Density (Air = 1): Not applicable

Solubility in Water: Not applicable

Flash Point: Not applicable

Appearance and Odor: Grey to silver solid; odorless

Specific Gravity (H_2O = 1): 2.8

Melting Point: 1110 – 1200°F (600 – 650°C)

Evaporation Rate Not applicable

10. Stability and Reactivity

Stability: Stable at room temperature

Incompatibility (Materials to Avoid):

Molten aluminum may explode on contact with water. In the form of particles, may explode when mixed with halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate. Aluminum particles on contact with copper, lead, or iron oxides can react vigorously with release of heat if there is a source of ignition or intense heat.

Hazardous Decomposition or By-Products:

In the form of particles (small chips, fine turnings, dusts), aluminum reacts with water and air humidity, strong basic solutions, strong acidic solutions, halogenated acids (e.g.: hydrofluoric acid), producing flammable hydrogen gas.

Hazardous Polymerization: Will not occur

11. Toxicological Information

Acute Effects:

CAS	Designation	LD_{50} (Oral Rat)	LC_{50}
7439-86-6	Iron	30 g/kg	Unknown
7439-96-5	Manganese	9000 mg/kg	Unknown
7440-21-3	Silicon	3160 g/kg	Unknown

Solid aluminum does not present any acute health effects.

Inhalation: Aluminum dusts generated during specific operations are considered as nuisance particulates

Skin Contact: Skin contact with hot metal can cause burns

Eyes Contact: Aluminum dust can irritate the eyes (mechanical abrasion)

Ingestion: Not applicable

Chronic Effects:

Solid aluminum does not present any chronic health effects.

Medical Conditions Aggravated by Exposure: Not applicable

Carcinogenicity:

Certain alloys of this series may contain chromium. Chromium and some of its compounds are listed in the current "Annual Report on Carcinogens" prepared by the "National Toxicology Program" (NTP). Does not contain any other carcinogen or potential carcinogen (NTP, Occupational Safety and Health Administration)

Mutagenicity: No data available.

Reproductive Toxicity: No data available.

12. Ecological Information

Ecotoxicity: Aluminum ecotoxicity has not been demonstrated using standard OECD test protocols.

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

Persistence/Biodegradability: Not relevant for metals.

Bioaccumulation: Minimal

13. Disposal Considerations

Recycle. Aluminum in the form of particles may be reactive. Its hazardous characteristics, including fire and explosion, should be determined prior to disposal. Dispose of waste in accordance with federal, state, or local regulations.

14. Transport Information

No regulated for shipping.

15. Regulatory Information

This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

Chemical Name	CAS Number
Aluminum	7429-90-5
Zinc	7440-66-6

16. Other Information

Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, for safe handling.

NOTICE:
The buyer assumes all risk in connection with the use of the material. Boose Aluminum Foundry Co., Inc. assumes no responsibility or liability in connection with the information supplied on this sheet for any damage or injury cause by the material if reasonable safety procedures are not followed as stipulated. Boose Aluminum Foundry Co., Inc. assumes no responsibility for injury or damage caused by abnormal use of the material even if reasonable safety procedures are followed. The information contained in this sheet is developed from what are believed to be accurate and reliable sources and is based on the best opinions and authoritative facts available at the time of the issue. No warranty, expressed or implied, can be made.

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