Revision Date: January 23, 2019

SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Aluminum Billet, 6XXX series alloy**

Manufacturer/Supplier: MATALCO INC.

	850 Intermodal Drive Brampton, Ontario L6T 0B5 Canada	**4420 Louisville Street, N.E. Canton, Ohio 44705 USA**	**5120 Tod Avenue SW Lordstown, Ohio 44481 USA**	**1390 South Adams Street Bluffton, IN 46714 USA**
Emergency Phone:	**Tel: (905) 790-2511 Fax: (905) 790-2057**	**Tel: (330) 452-4760 Fax: (330) 452-4816**	**Tel: (234) 806-0600 Fax: (234) 806-0601**	**Tel: (234) 806-0600 Fax:(234) 846-0740**

CANUTEC: (613) 996-6666

Product Use: **Secondary Remelt Metal - Finished Product**

SECTION 2. HAZARD IDENTIFICATION

Physical Description: Solid

Handling Information: Not hazardous in solid form. Fine particles from processing may be readily ignitable. Fine particles and molten metal are highly reactive with water, basic or acidic solutions, strong oxidizers, halogenated compounds and certain metal oxides.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Content (%)	[1] LD_{50}	[2] DC_{50}
Aluminum	7429-90-5	>97	Unknown	Unknown
Silicon	7440-21-3	0.40 – 0.7	3160 mg/kg	Unknown
Iron	7439-89-6	0.2 – 0.3	3000 mg/kg (oral-rat)	Unknown
Copper	7440-50-8	0.0 – 0.2	Unknown	Unknown
Magnesium	7439-95-4	0.3 – 0.9	Unknown	Unknown
Manganese	7439-96-5	0.0 – 0.1	9000 mg/kg (oral-rat)	Unknown
Zinc	7440-66-6	0.0 – 0.1	Unknown	Unknown
Chromium	7440-47-3	0.0 – 0.1	27.5 mg/kg (rat)	Unknown
Titanium	7440-32-6	0.0 – 0.1	Unknown	Unknown

[1] LD_{50} = Lethal dose for 50% of animals tested
[2] LC_{50} = Lethal concentration for 50% of animals tested

SECTION 4. FIRST AID MEASURES

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

Skin contact: (dust form) Flush affected skin with soap and water for 15 minutes; (molten or hot metal form) In case of burns with metal, rinse with plenty of cold water. If burn is severe, consult a physician immediately.

Eyes Contact: Flush eyes with water for at least 15 minutes taking care to rinse under eyelids. If irritation persists, continue flushing and rinsing from time to time under eyelids. Obtain medical attention if discomfort continues.

Ingestion: Not applicable.

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing Media: Not a fire hazard unless in particle form (small chips, fine turnings, dusts). Suspensions of aluminum dust in air may pose a severe explosion hazard, especially in a confined atmosphere. Avoid sparks and prevent electrostatic charges from accumulating. A potential for explosion exists for a mixture of fine and coarse particles if at least 15% to 20% of the material is finer than 44 microns (325 mesh). Buffing and polishing generate finer material than grinding, sawing and cutting. In case of aluminum fires, use a class D dry powder extinguisher. Do not use water or halogenated extinguishing media.

Hazardous Combustion Products: Not applicable

SECTION 6. ACCIDENTAL RELEASE MEASURES

Environmental Protection / Cleaning Method(s): Recycle if and when possible.

SECTION 7. HANDLING AND STORAGE

Handling Precautions: Because of the risk of explosion, aluminum ingots and metal scrap should be thoroughly dried prior to remelting. Use standard techniques to check metal temperature before handling. Hot aluminum does not present any warning colour change. Exercise great caution, since the metal may be hot. For more information on the handling and storage of aluminum, consult the following documents published by the Aluminum Association, 900 19th St., N.W., Washington D.C., 20006:

- Guidelines for Handling Molten Aluminum
- Recommendations for storage and handling of aluminum powders and paste
- Guidelines for handling aluminum fines generated during various aluminum fabricating operations

Storage Conditions: Not applicable

SECTION 8. EXPOSURE CONTROLS / EMPLOYEE PROTECTION DATA

Exposure Controls: Occupational Exposure Limits

Component	CAS No.	[1] OSHA (mg.m3)	[2] ACGIH (mg/m3)	[3] Ontario OHSA (mg/m3)
		TWA	TLV	TWAEV
Aluminum	7429-90-5	15 (total) 5 (respirable)	10 (dust) 5 (respirable)	5
Silicon	7440-21-3	-	-	10
Iron	7439-89-6	10 (dust, fumes)	5 (fumes)	5 (oxide)
Copper	7440-50-8	1 (dust), 0.1 (fumes)	1 (dust) 0.2 (fumes)	1 (dust) 0.2 (fumes)
Magnesium	7439-95-4	15 (total) 5 (respirable)	10	10
Manganese	7439-96-5	5	0.2 (dust) 1 (fumes)	0.2 (dust)
Zinc	7440-66-6	15 (total) 5 (respirable)	10 (dust) 5 (fumes)	10 (dust)
Chromium	7440-47-3	1	0.5	0.01 (insoluble as, Cr)
Titanium	7440-32-6	-	10 (as TiO2)	-

[1]OSHA: Occupational Safety and Health Administration 29 CFR 1910.1000 (United States);
[2]ACGIH: American Conference of Governmental Industrial Hygienists;
[3]Ontario OHSA: Ontario Occupational Health & Safety Act;
TWA: Time-weighted Average—an average value of exposure over the course of an 8 hour work shift;
TLV: Threshold Limit Value reflects the level of exposure that the typical worker can experience without an unreasonable risk of disease or injury. TLVs® are **not** quantitative estimates of risk at different exposure levels or by different routes of exposure.;
TWAEV: Time- weighted average exposure value—is the allowable average of the airborne concentrations of a biological or chemical agent determined from air samples of the airborne concentrations to which a worker is exposed in a work day or a work week. (O. Reg. 833)

Mechanical Ventilation: Provide general and local ventilation to maintain concentrations of air contaminants below recommended standards. Special ventilation should be used to convey finely metallic dust generated by grinding, sawing or polishing operations, in order to eliminate explosion hazards. Maintain dust concentration in ventilation ducts below the lower explosive limit of 40 g/m^3 (0.04 oz/ft^3). See National Fire Protection Association Codes: Code 65 "Processing and Finishing of Aluminum", Code 651 "Standard for the machining and Finishing of Aluminum and the Production and Handling of Aluminum Powder" and code 77 "Static electricity". Use an approved respirator designed for the hazard, where concentrations exceed exposure limits. The use of both primary and secondary protective equipment is necessary when handling molten metal. Refer to "Aluminum Association" guidelines.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles by OSHA's eye and face protection regulations in 29 CFR 1910.133 and CAN Z87.1.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Whenever workplace conditions warrants respiratory use a respiratory protection program has to be followed that meets OSHA's respirator regulations in 29 CFR 1910.134, and CSA standard Z94.4-02.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	Appearance:	Metallic grey
pH :	Not applicable	Flash Point:	Not applicable
Boiling Point:	Not applicable	Auto-ignition Temperature:	Not applicable
Melting Point:	482 – 660 °C	Lower Flammable Limit:	Not applicable
Vapour Pressure:	Not applicable	Higher Flammable Limit:	Not applicable
Vapour Density (air=1):	Not applicable	Explosive Properties:	Not applicable
Evaporation Rate:	Not applicable	NFPA Fire Code: 0	
Relative Density (water=1):	2.5 – 2.9	Oxidizing Properties:	Not applicable
Water Solubility:	Not applicable	Partition Coefficient (n-octanol/water):	Not applicable
Odour Threshold:	Not applicable		

SECTION 10. REACTIVITY and STABILITY DATA

Chemical Stability:

Stable under normal temperatures and pressures. Aluminum powder may evolve hydrogen gas in contact with water, and finely divided dust may be ignited by naked lights or sparks. Polished aluminum powders which have been treated with oils or wax for printing or paint purposes are not generally dangerous. Uncoated aluminum powder reacts with strong acid and strong alkalis to release hydrogen gas.

Conditions to Avoid:

Molten aluminum will explode when water, ice, or ammonium nitrate becomes entrapped in metal bath. 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 the release of heat if there is a source of ignition or intense heat, or dispersion.

Incompatibilities with Other Materials:

In the form of particles and dusts: Water, acidic and basic solutions.

Hazardous Decomposition Products:

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

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Effects: Solid aluminum does not present any acute health effects**.**

Routes of Exposure:

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

Skin Contact: Skin contact with hot metal can cause burns.

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

Ingestion: Not applicable

LD_{50} / LC_{50}:

Designation	CAS No.	LD 50 (oral rat)	LC50
Iron	**7439-86-6**	**30 g/kg**	**Unknown**
Manganese	**7439-96-5**	**9000 mg/kg**	**Unknown**
Silicon	**7440-21-3**	**3160 mg/kg**	**Unknown**

Chronic Effects: Solid aluminum does not present any chronic health effects.

Skin Contact: Skin sensitization to nickel may result in chronic eczema: “Nickel itch”.

Medical Conditions Aggravated by Exposure to the Product: Not Applicable

Carcinogenicity: Certain alloys of this series may contain chromium and nickel. Nickel, chromium and some of their 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 (IARC, NTP, OSHA). (IARC = International Agency for Research on Cancer; NTP = National Toxicology Program [USA]; OSHA = Occupational Safety and Health Administration [USA])

Mutagenicity: No data available

Reproductive Toxicity: No data available

Supplementary Information: Aluminum fumes generated during welding or melting present low health risks. Welding or plasma arc cutting of aluminum alloys can generate ozone, nitric oxides and ultraviolet radiation. Ozone overexposure may result in mucous membrane irritation or pulmonary discomfort. UV radiation can cause skin erythema and welders flash. High concentrations of freshly-formed fumes of copper, magnesium, manganese or zinc oxides can produce symptoms of metal fume fever. High concentrations of manganese dust can affect the central nervous system (apathy, drowsiness, weakness and other symptoms resembling to Parkinson’s disease). High concentrations of copper dust can cause irritation of the upper respiratory tract.

SECTION 12. ECOLOGICAL INFORMATION

Eco-toxicity: Aluminum eco-toxicity has not been demonstrated using standard OECD test protocols.

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

Persistence/Biodegradability: Not relevant for metals.

Bioaccumulation: Minimal.

SECTION 13. DISPOSAL INFORMATION

General Information: Use proper personal protective equipment as indicated in **Section 8**.

Methods of Disposal: Recycle (reprocess) if possible. 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, provincial, state, or local regulations.
Note: Reference to the European Waste Catalog (EWC) in section 15

SECTION 14. TRANSPORT INFORMATION

TDGR: not regulated; ADR: not regulated; CFR 49: not regulated; IMO: not regulated; IATA: not regulated

(TDGR = Transportation of Dangerous Goods Regs. (Canada); ADR: European agreement relative to international transport of dangerous goods by road. CFR 49 =
Code of Federal Regs. (USA). IMO = International Maritime Organization. ICAO = International Civil Aviation Organization. IATA = International Air Transport
Association.)

SECTION 15. REGULATORY INFORMATION

Global Harmonized System:

May cause irritation like skin irritation, or less serious toxicity

References:
GHS criteria is based on The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) from the United Nations Economic Commission for Europe (UNECE), 5th revised edition.

Canadian Regulation:

WHMIS Classification: D2B Toxic material causing other toxic effects

Reference:
WHMIS: Workplace Hazardous Materials Information System, Reg.860

European Union Classification:

Warning Symbol(s):
Xn Harmful
Risk Phrase(s):
R40: Limited evidence of a carcinogenic effect.
R43: May cause sensitization by skin contact.
Safety Phrase(s):
S22: Do not breathe dust.
S36: Wear suitable protective clothing.

References:
Directive 67/548/EC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances.
Directive 1999/45/EC concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labeling of dangerous preparations.

European Waste Catalog (EWC):

EU 12 01 03*: Wastes from shaping and physical and mechanical surface treatment of metals and plastics; non-ferrous metal filings and turnings.
(Reference: Decree No 2002-540 of April 18, 2002 relative to the classification of wastes.)

USA Regulation(s):

Supplier notification:

This product may contain trace amounts of lead, which concentration does not meet the disclosure requirements of the "Hazard Communication Standard" (HCS) of the United States or the Canadian "Workplace Hazardous Material Information System" (WHMIS). Any process resulting in exposure to more than 0.5 mg/m^3 of metal dust per day may result in a daily dose of lead of over 0.5 Pg/day, the dose above which the "California Safe Drinking Water and Toxic Enforcement Act" of 1986 requires notification. Refer to the appropriate regulation notification wording guidelines.

Section 313

This product may contain 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 (Title III of SARA) and of 40 CFR 372. (This information must be included in all SDS's that are copied and distributed for this material).

SECTION 16. ADDITIONAL INFORMATION

IMPORTANT: The purpose of this sheet is to set out pertinent information which may be necessary to evaluate health, safety and environmental hazards when handling the material and to set forth safety precautions for safe handling of the material. Handling practices set forth herein is recommended minimums. Matalco Inc. assumes no responsibility in the safe handling of the material by others and makes no representation or warranty, expressed or implied, as to completeness, accurateness, or currency of any data contained herein.

This material safety data sheet is in accordance with Global Harmonized System of Classification and Labelling of Chemicals (GHS) 5th revised edition, WHMIS Ont. Reg.860, Directive 2001/58/EC, CFR, and ANSI Z400.1-2003

SDS Prepared by: **Environmental Health and Safety Department**
Matalco Inc.

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