Safety Data Sheet

Material Name: Aluminum Extrusion Metal, 6005A Series Alloys Safety Data Sheet

*** 1. Product Name and Company Identification ***

MATERIAL NAME	Aluminum Extrusion Metal, 6005A Series Alloys
PRODUCT NAME	00001E
MANUFACTURER INFORMATION	Sierra Aluminum, a Division of Samuel Son & Co. (USA) Inc. 2345 Fleetwood Drive Jurupa Valley, California Phone: (951)781-7800 Fax: (951) 787-6576
APPEARANCE AND ODOR	Grey to silver solid; odorless
USES	Primary Metal

*** 2. Hazardous Identification ***

General Hazard Statement: Under the definition of the OSHA Hazard Communication Standard (29 CFR 1910.1200), solid metallic products are classified as "articles" and do not contain hazardous materials in solid form. Any articles manufactured from these solid products would be generally classified as non-hazardous. However, these products contain hazardous elements that can be emitted under certain processing conditions such as burning, melting, cutting, sawing, brazing, grinding, machining, milling, and welding. There is no fire or explosion hazard presented in the solid state. Small chips, fines, and dust may ignite readily, though. The following classification information is for the hazardous elements which may be released during processing.

GHS Classification:

Flammable Solid- Category 1
Eye Damage/Irritation- Category 2B
Respiratory Sensitizer- Category 1
Skin Sensitizer- Category 1
Germ Cell Mutagenicity- Category 2
Carcinogenicity- Category 1B
Specific Target Organ Toxicity (Repeated Exposure)- Category 1
Hazardous to the Aquatic Environment –Acute Hazard- Category 1
Hazardous to the Aquatic Environment- Chronic Hazard- Category 2

GHS Label Elements:

Symbols

Signal Word Danger

Hazard Statements

Flammable solid.
Causes eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause and allergic skin reaction.
Suspected of causing genetic defects.
May cause cancer.
If prolonged or repeated exposure exits, it can cause damage to respiratory system.
Very toxic to the aquatic life. Toxic to the aquatic life with long lasting effects.

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Precautionary Statements:

Prevention

Keep away from heat/sparks/open flames/hot surfaces. –No smoking.
Use explosion proof electrical/ventilating/lighting equipment.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not breathe dust/fume.
In case of inadequate ventilation wear respiratory protection.
Contaminated work clothing should not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment

Response

In case of fire: Use Class D agent to extinguish.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. If eye irritation persists get medical advice/attention.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison center/doctor.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
If exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell. Collect spillage

Storage

Store locked up

Disposal

Dispose of contents/containers with local/region/national/international regulations

*** 3. Composition/ Information on Ingredients ***

CASE #	NAME	CONC.
7429-90-5	Aluminum	Remainder
7440-47-3	Chromium**	0.01-0.30%
7440-50-8	Copper	<0.30%
7439-89-6	Iron	<0.35%
7439-95-4	Magnesium	0.40-0.70%
7439-96-5	Manganese**	0.11-0.50%
7440-21-3	Silicon	0.50-0.90%
7440-32-6	Titanium	<0.10%
7440-66-6	Zinc	<0.20%
	Others (each)	0.05%
	Others (total)	0.15%

*For more detailed chemical composition, refer to the certificate of analysis.
**Manganese plus chromium shall total 0.12-0.50

*** 4. First aid Measures***	
First Aid: Inhalation	In case of discomfort, remove to a ventilated area. If discomfort persists, consult a physician.
First Aid: Skin	In case of burns with hot metal, rinse with plenty of cold water. If burn is severe, consult a physician.
First Aid: Eyes	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.
First Aid: Ingestion	Not applicable.

*** 5. Fire Extinguisher Measures ***	
General Fire Hazards	Not applicable. This product does not present fire or explosion hazards. Small chips, fines and dust from processing may be ignitable.
Extinguishing Media	Not a fire hazard unless in particle form. Suspensions of aluminum dust in air may pose a severe explosion hazard. 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** (Lith-X). Do not use water or halogenated extinguishing media.
Hazardous Combustion Products	Not Applicable. In the event of fire and/or explosion, do not breathe fumes.
Fire Fighting Equipment/ Instructions	Wear self-contained breathing apparatus, MSHA/NIOSH (approved or equivalent) and full protective gear.

*** 6. Accidental Release Measures ***	
Recovery and Neutralization	Recycle if possible. Avoid dust formation.
Methods for Clean Up	If molten, contain flow using dry sand or salt flux as a dam. Preheat or specially coat all tools and containers that come in contact with molten metal. Must be rust free. Allow spill to cool before remelting as scrap.
Emergency Measures	Keep away from spill/leak.
Personal Protective Equipment (PPE)	Wear appropriate protective equipment and respiratory equipment for the situation.
Environmental Precautions	Prevent further leakage or spillage. Prevent from entering the drains. Do not flush into surface water or sanitary water system.
Prevention of Secondary Hazards	None

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*** 7. Handling and Storage ***

Handling Precaution

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 color 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
- Recommendation for storage and handling of aluminum powders and paste.
- Guidelines for handling Aluminum fines generated during various aluminum fabrications operations.

Storage Conditions

Keep containers closed and dry.

*** 8. Exposure Control/ Personal Protection ***

Special ventilation should be used to convey finely divided metallic dust generated by grinding, sawing etc., in order to eliminate explosion hazards. Maintain dust concentration in ventilation ducts below the lower explosive limit of 40 g/mg (0.04 oz/ft3). See "National Fire Protection Association Codes": Code 65 "Processing and Finishing of Aluminum", Code 651, "Standard for the manufacture of Aluminum and magnesium 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.

Engineering Controls

Use adequate ventilation to meet exposure limits listed in this section.

Eye Protection

When cutting, wear approves safety glasses and/or goggles to prevent foreign particles from projecting in to the eye.

Skin Protection

Wear appropriate gloves to avoid direct skin contact.

Exposure Limits	**ACGIH (TLV)**		**OSHA (PEL)**	
	TWA	**STEL**	**TWA**	**CEILING**
Aluminum (total dust)	10 mg/m3	None	15 mg/m3	None
(fume, powder, respirable dust)	5 mg/m3	None	5 mg/m3	None
Silicon (total dust)	10 mg/m3	None	15 mg/m3	None
(Respirable dust)	None	None	5 mg/m3	None
Iron Oxide (fume, dust)	5 mg/m3	None	10 mg/m3	None
Copper (fume)	0.2 mg/m3	None	.10 mg/m3	None
(dust)	1.0 mg/m3	None	1.0 mg/m3	None
Magnesium, Oxide (fumes)	10 mg/m3	None	15 mg/m3	None
Manganese (as Mn and compounds)	0.2 mg/m3	None	None	5 mg/m3
Zinc (oxide fume)	5 mg/m3	10 mg/m3	5 mg/m3	None
(total dust)	10 mg/m3	None	15 mg/m3	None
(respirable dust)	None	None	5 mg/m3	None
Chromium (metal)	0.5 mg/m3	None	1.0 mg/m3	None

*** 9. Physical and Chemical Properties ***

pH	N/A	**Flashpoint**	N/A
Boiling point	N/A	**Auto ignition temperature**	N/A
Melting point	482-660 C	**Lower flammability limit**	N/A
Vapor Pressure	N/A	**Higher flammability limit**	N/A
Vapor Density (Air=1)	N/A	**Explosive properties**	N/A
Evaporation Rate	N/A	**NFPA Fire Code**	0
Relative Density (water =1)	2.5-2.9	**Oxidizing Properties**	N/A
Water solubility	N/A	**Partition Coefficient**	N/A
Odor threshold	N/A	**(N-Octa Nol/water)**	N/A

*** 10. Chemical Stability and Reactivity Information ***

Stable (yes/no) Yes

Conditions and Materials to Avoid Molten aluminum may explode on contact with water. In the form of particles, it may explode when mixed with halogenated acids, halogenated solvents, bromates, iodated 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 Products In the form of particles, aluminum reacts with water, strong basic solutions, strong acidic solutions, halogenated acids (eg. Hydrofluoric acid) producing flammable hydrogen gas).

*** 11. Toxicologial Information ***

ROUTES OF EXPOSURE:

Inhalation	Yes	**Ingestion**	No		
Eye Contact	No	**Skin Contact**	No	**Skin Absorption**	No

ACUTE TOXICITY:

Component Analysis- LD50/LC50

Iron (7439-89-6)
Oral LD50 Rat 984 mg/kg

Magnesium (7439-95-4)
Oral LD50 Rat 230 mg/kg

Manganese (7439-96-5)
Oral LD50 Rat 9g/kg

Silicon (740-21-3)
Oral LD50 Rat 3160 mg/kg

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ACUTE EFFECTS:

Inhalation Solid aluminum does not present an inhalation hazard. Aluminum and silicon dusts generated during use are considered nuisance particulates.

Skin Contact Skin contact with hot metal can cause burns.

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

Ingestion May be harmful if swallowed.

CHRONIC EFFECTS:

Medical conditions aggravated by exposure to the product: Not applicable

Carcinogenicity/Mutagenicity/Reproductive Toxicity:

Certain alloys of this series may contain chromium. Chromium and 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 (IARC, NTP, OSHA). (IARC=International Agency for Research on Cancer; NTP=National Toxicology Program ; OSHA=Occupational Safety and Health Administration)..

Carcinogenicity: May cause cancer

Component Carcinogenicity

Aluminum (7429-90-5)
ACGIH: A4 - Not Classifiable as a Human Carcinogen

Chromium (7440-47-3)
ACGIH: A4 - Not Classifiable as a Human Carcinogen
IARC: Monograph 49 [1990] (listed under Chromium and Chromium compounds); Supplement 7 [1987] (Group 3 (not classifiable))

Mutagenicity : Suspected of causing genetic defects

Reproductive Toxicity: May cause damage to the respiratory system organs through prolonged or repeated exposure. Repeated contact may cause allergic reactions. Avoid repeated exposure. Prolonged exposure may cause chronic effects. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

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 over exposure 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 copper dust can cause irritation of the upper respiratory tract. High concentrations of manganese dust can affect the central nervous system (apathy, drowsiness, weakness and other symptoms resembling to Parkinson's Disease).

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*** 12. Ecological Information ***

Ecotoxicity: Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. Aluminum and its alloys under solid form, such as ingots or manufactured items, do not present any hazard for environment because metals are not biologically available. Aluminum can be recycled.

Component Analysis

Copper (7440-50-8)

Test & Species	Conditions
96 Hr LC50 Pimephales promelas	0.0068 - 0.0156mg/L
96 Hr LC50 Pimephales promelas	<0.3 mg/L [static]
96 Hr LC50 Pimephales promelas	.2 mg/L [flow-through]
96 Hr LC50 Oncorhynchus mykiss	0.052 mg/L [flow-through]
96 Hr LC50 Lepomis macrochirus	1.25 mg/L [static]
96 Hr LC50 Cyprinus carpio	0.3 mg/L [semi-static]
96 Hr LC50 Cyprinus carpio	0.8 mg/L [static]
96 Hr LC50 Poecilia reticulate	0.112 mg/L [flow- through]
72 Hr EC50 Pseudokirchneriella subcapitata	.0426 - 0.0535 mg/L [static]
96 Hr EC50 Pseudokirchneriella subcapitata	0.031-0.054 mg/L [static]
48 Hr EC50 Daphnia Magna	0.03 mg/L [static]

Iron (7439-89-6)

Test & Species	Conditions
96 Hr LC50 Morone saxatilis	13.6 mg/L [static]
96 Hr LC50 Cyprinus carpio	0.56 mg/L [semi-static]

Zinc (7440-66-6)

Test & Species	Conditions
96 Hr LC50 Pimephales promelas	2.16 - 3.05 mg/L [flow -through]
96 Hr LC50 Pimephales promelas	0.211-0.269 mg/L [semi-static]
96 Hr LC50 Pimephales promelas	2.66 mg/L [static]
96 Hr LC50 Cyprinus carpio	30 mg/L
96 Hr LC50 Cyprinus	0.45 mg/L [semi-static]
96 Hr LC50 Cyprinus carpio	7.8 mg/L [static]
96 Hr LC50 Lepomis macrochirus	3.5 mg/L [static]
96 Hr LC50 Oncorhynchus mykiss	0.24 mg/L [flow - through]
96 Hr LC50 Oncorhynchus mykiss	0.59 mg/L [semi - static]
96 Hr LC50 Oncorhynchus mykiss	0.41 mg/L [static]
96 Hr EC50 Pseudokirchneriella subcapitata	0.11 - 0.271 mg/L [static]
72 Hr EC50 Pseudokirchneriella subcapitata	0.09 - 0.125 mg/L [static]
48 Hr EC50 Daphnia magna	0.139 - 0.908 mg/L [Static]

Degradability: Metal powders may cause ecological damage through silting or sedimentation effect in water depriving organisms of habitat and mobility, and/or fouling of gills, lungs and skin thus limiting oxygen uptake.

Bioaccumulation: Metal powders in water or soil may form metal oxides or other metal compounds that could become bioavailable and harm aquatic or terrestrial organisms.

Mobility in soil: Metal powder would be relatively immobile in soils but some metal compounds may be transported with ground water.

*** 13. Disposal Considerations ***

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

*** 14. Transport Information ***

TDGR: Not regulated **CFR 49:** Not regulated **IMO:** Not regulated **ICAO:** Not regulated **IATA:** Not regulated {**TDGR** = Transport of Dangerous Good Regs. (Canada). **CFR 49** – Code of Federal Regs .(USA). **IMO** = International Maritime Organization. **ICAO** = International Civil Aviation Organization. **IATA** = International Air Transport Association})

*** 15. Regulatory Information ***

WHMIS Classification (Canada)	D2 Material causing other toxic effects
European Union Classification	Not classified
Warning Symbol	None
Warning Word	None
Risk Phrases	None
Safety Phrases	None

U.S. Federal Regulations

Section 313 Supplier Notification

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 (Title 111 of SARA) and of 40 CFR 372. (This information must be included in all MSDSs that are copied and distributed for this material).
CERCLA Hazardous Substances: Chromium, Copper, Zinc.
TSCA: All components of this product are listed in the TSCA inventory.

A. Component Analysis

Aluminum (7429-90-5)

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

Chromium (7440-47-3)

CERCLA: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

Copper (7440-50-8)

SARA 313:1.0 % de minimis concentration
CERCLA:5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

Manganese (7439-96-5)

SARA 313: 1.0% de minimis concentration

Zinc (7440-66-6)

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

CERCLA:454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)

B. Component Marine Pollutants

Copper (7440-50-8)

0-6.9 DOT regulated severe marine pollutant (powder)

State Regulations

The following appear on one or more of the state hazardous substance lists

A. Component analysis

Component	CAS#	CA	MA	MN	NJ	PA	RI
Aluminum	7429-90-5	Yes	Yes	Yes	Yes	Yes	Yes
Chromium	7440-47-3	Yes	Yes	Yes	Yes	Yes	Yes
Copper	7440-50-8	Yes	Yes	Yes	Yes	Yes	Yes
Iron	7439-89-6	Yes	No	No	No	No	No
Magnesium	7439-95-4	Yes	Yes	No	Yes	Yes	Yes
Manganese	7439-96-5	Yes	Yes	Yes	Yes	Yes	Yes
Silicon	7440-21-3	No	Yes	Yes	Yes	Yes	Yes
Titanium	7440-36-6	Yes	Yes	Yes	Yes	Yes	Yes
Zinc	7440-66-6	Yes	Yes	No	Yes	Yes	Yes

WARNING! This product contains a chemical known to the state of California to cause cancer and reproductive/developmental effects.

The following components are identified under the Canadian Hazardous Products Act Ingredients Disclosure Lists

Component	CAS#	Minimum Concentration
Aluminum	7429-90-5	1%
Chromium	7440-47-3	0.1%
Copper	7440-50-8	1%
Manganese	7439-96-5	1%

Additional Regulatory Information

Component Analysis- Inventory

Component	CAS #	TSCA	CAN	EEC
Aluminum	7429-90-5	Yes	DSL	EINECS
Chromium	7440-47-3	Yes	DSL	EINECS
Copper	7440-50-8	Yes	DSL	EINECS
Iron	7439-89-6	Yes	DSL	EINECS
Magnesium	7439-95-4	Yes	DSL	EINECS
Manganese	7439-96-5	Yes	DSL	EINECS
Silicon	7440-21-3	Yes	DSL	EINECS
Titanium	7440-32-6	Yes	DSL	EINECS
Zinc	7440-66-66	Yes	DSL	EINECS

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California Proposition 65: Hexavalent Chromium (if present) is known in the State of California to cause cancer. This product contains trace amounts of lead (Pb) (<0.1%). Any process resulting exposure to more than 0.5 mg/m3 of metal dust per day may result in a daily dose of lead of over 0.5 ug/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. The dose is considered dangerous for health according to current toxicology studies.

*** 16. Other Information ***

Abbreviations

CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. TSCA = Toxic Substances Control Act. SARA = Superfund Amendments and reauthorization Act. WHMIS = Working Hazardous Material Information System (Canada). EEC= European Economic Community. DSL= Domestic Substance List. EINECS= European Inventory of Existing Commercial Chemical Substances. CASE Number = Chemical Abstracts Service Registry Number. NFPA=National Fire Protection Association. HMIS= Hazardous Material Information System. LD50 – Lethal dose 50%; LC50 = Lethal Concentration 50%; LCL– Lowest published Lethal Concentration. EU –European Union.; NIOSH= National Institute for Occupational Safety and Health; ACGIH= American Conference of Governmental Industrial Hygienists; TLV= Treshold Limit Value; OSHA= Occupational Safety and Health Administration; PEL= Permissible Exposure Limit; TWA= Time weighted Average; STEL= Short Term Exposure Limit; Ceiling = Ceiling Value**.**

Hazard Ratings: NFPA=N/A, HMIS=N/A

Although the information in this MSDS was obtained from sources, which we believe to be reliable, it cannot be guaranteed. In addition, this information may be used in a manner beyond our knowledge or control. The information is therefore provided for advice purposes only, without any representation or warranty expressed or implied.*

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