

SAFETY DATA SHEET

6xxx Extruded Aluminum

SECTION 1, IDENTIFICATION

I. **Product Identification**

Product form: Mixture

Product name: Wrought Aluminum Products, 6xxx Series Alloys

Synonyms: 6060, 6063, 6061, 6005A, 6105 & 6082

II. **Recommended use of Product**

Fabricated aluminum parts and products

III. **Recommended Restriction**

For Industrial Use Only

IV. **Name, Address and Telephone of Manufacturer**

Atlas Architectural Metals Inc.

9210 Emmott Road

Houston, TX. 77040

Phone: (713)869-9551

Website: www.atlasarchmetals.com

Issue Date: April 27, 2016

V. **Emergency Telephone Number**

Emergency number: (832)289-2197

Note: This product is considered an "article" under the definition of 29 CFR 1910.1200, we have furnished this information in good faith.

SECTION 2, HAZARDS(S) IDENTIFICATION

I. **Classification of the Substance of Mixture**

Classification (GHS-US) Globally Harmonized System – United States

Not classified

II. **Label Elements**

GHS-US Labeling - No labeling applicable

III. **Other Hazards**

This product is physiologically inert in its massive form. However, user-generated dust and/or fumes may pose a physiological hazard if inhaled or ingested. Avoid inhalation of metal dusts and fumes. May cause an influenza-like illness. Avoid skin and eye contact with dusts to prevent mechanical irritation. User-generated dust is easily ignited and difficult to extinguish. This product contains components that are environmentally hazardous and small chips, fine tunings, and dust from processing may be toxic to aquatic life.

IV. **Unknown Acute Toxicity (GHS-US)**

No data available.

SECTION 3, COMPOSITION / INFORMATION OF INGREDIENTS

I. **Substance**

Not applicable

II. **Mixture**

Chemical Name / Abbreviation:

Chemical Name	Product Identifier	Max Percentage (%)
Aluminum (Al)	CAS NO. 7429-90-5	98.0
Silicon (Si)	CAS NO. 7440-21-3	0.8
Iron (Fe)	CAS NO. 7439-89-6	0.3
Copper (Cu)	CAS NO. 7440-50-8	1.0
Manganese (Mn)	CAS NO. 7439-96-5	0.15
Magnesium (Mg)	CAS NO. 7439-95-4	1.2
Chromium (Cr)	CAS NO. 7440-47-3	0.15
Zinc (Zn)	CAS NO. 7440-66-6	0.25
Tin (Ti)	CAS NO. 7440-31-5	0.15
Others Each	n/a	0.05
Others Total ³	n/a	0.15

Note: The above components are typical. The product may contain all or some of these components.

SECTION 4, FIRST AID MEASURES

I. Description of First Aid Measures

First-Aid Aid Measures General: Never give anything by mouth to an unconscious person. If medical advice is needed, have the product container or label at hand.

First-Aid Measures after Inhalation: Dust and fumes from processing; remove to fresh air and keep in a position of rest in a position comfortable for breathing. Immediately call a Poison Control Center, 1(800) 222-1222 or doctor/physician.

First-Aid Measures after Skin Contact: Dust and fumes from processing and contact with lubricants/residual oil. Wash with soap and water at least 15 minutes. If irritation develops and persists consult a physician

First-Aid Measures after Eye Contact: Dust and fumes from processing can cause irritation. Rinse thoroughly with plenty of water or saline for a minimum of 15 minutes. Consult a physician.

First-Aid measures After Ingestion: Not relevant due to the form of the product.

II. Most important symptoms and effects, delayed and acute.

Symptoms/Injuries: Does not present a significant hazard under normal conditions of use. During physical alteration or processing flakes or powder cause irritation of the respiratory tract, eyes, skin and are harmful.

Inhalation: The most significant means of exposure during processing is by breathing, (inhaling) the fumes. If inhaled, the fumes can cause a flu-like symptom known as metal fume fever. The symptoms are a sudden onset of thirst and a sweet, metallic or foul taste in the mouth. These symptoms may be delayed 4 to 12 hours after exposure. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, malaise and a sense of fatigue. Muscular pain, chills, fever, nausea, mild to severe headaches, occasional vomiting, profuse sweating, excess urination, diarrhea, exaggerated mental activity and prostration may also occur.

Skin Contact: When hot, contact can cause skin burns. Contact with fumes can irritate the skin. , Dust may cause skin irritation in skin folds or by contact with tight clothing. Injury can also occur from flying particles of the material.

Eye Contact: Dust caused from milling or any other physical alteration may cause eye irritation. Mechanical damage via flying particles is also possible.

Ingestion: Ingestion is not considered a potential route of exposure.

Chronic Symptoms: Aluminum: Inhalation of finely divided aluminum powder may cause pulmonary fibrosis. Zinc: Prolonged exposure to high concentrations of zinc fumes may cause an involuntary twitching of the muscles, "zinc shakes". Otherwise zinc is non-toxic. Iron Oxide is not hazardous, however if the fumes are inhaled undergoing decomposition it may cause irritation and flu-like symptoms. Chromium: Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of studies on the control of diseases of workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to the International Agency for Research on Cancer (IARC) volume 23 for a more detailed discussion. Silicon: Can cause chronic bronchitis and narrowing of the airways. Manganese: Chronic exposure can cause inflammation of the lung tissue, scarring the lungs, (pulmonary fibrosis). Anemia. Copper: Over exposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, and lassitude): metallic or sweet taste, discoloration of the skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure.

SECTION 5, FIRE-FIGHTING MEASURES

I. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: DO NOT USE halogenated extinguishing agents on small chips, dust, fines or particulate. These fire extinguishing agents will react, sometimes violently, with the burning material.

II. Special Hazards

Fire Hazard: An ignitions source, improper machining, or spontaneous combustion can ignite dust, chips or ribbons if they are finely divided and damp.

Explosion Hazard: The product is not explosive.

Reactivity: Stable at ambient temperature and under normal conditions of use.

III. Advice for Firefighters

Precautionary Measures: Be wary of fumes when fighting a chemical fire. Hazardous fumes will be present.

Firefighting Instructions: Use gentle surface application of the appropriate extinguishing agent or dry inert granular material (e.g. sand) to cover and ring the burning material.

Firefighting Protection: Firefighters must use full bunker gear including National Institute for Occupational Safety and Health (NIOSH) approved positive pressure self-contained breathing apparatus

Other information: Refer to section 9 for flammability properties.

SECTION 6, ACCIDENTAL RELEASE MEASURES

I. For Non-emergency Personnel

Protective Equipment: Wear appropriate PPE, Personal Protective Equipment. See Section 8.

Emergency Procedure: Avoid creating or spreading dust.

II. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection, clothing, gloves, and eye/face protection.

Emergency Procedures: Evacuate unnecessary personnel, eliminate ignition sources and isolate and ventilate the area.

Environmental Precautions

Block runoff to sewers and public waterways. Notify authorities if runoff reaches these areas.

III. Methods of Containment and Cleanup

For Containment: Contain and collect as any solid. Avoid creation of dust during cleanup of spills.

Cleanup Methods: Use Non-sparking tools during cleanup.

SECTION 7, HANDLING AND STORAGE

I. Precautions for Safe Handling

Avoid generating dust, it can be combustible. Avoid contact with sharp edges or heated metal. Heated and cold aluminum look alike. Heated aluminum does not change color but remains silvery-gray... Use personal protection recommended in Section 8.

II. Safe Storage and Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store the material carefully to avoid damage.

Incompatible Products: Strong acids, bases and oxidizers, humidity, water and alkalis. Corrosive substances in contact with metals may produce flammable hydrogen gas.

SECTION 8, EXPOSURE CONTROLS / PERSONAL PROTECTION

I. Control Parameters

Aluminum (7429-90-5)			
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³ (respirable fraction)	
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)	
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	
Silicon (7440-21-3)			
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)	
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	
Copper (7440-50-8)			
USA ACGIH	ACGIH TWA (mg/m ³)	0.2 mg/m ³ (fume)	
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³ (dust and mist) 0.1 mg/m ³ (fume)	
USA IDLH	US IDLH (mg/m ³)	100 mg/m ³ (dust, fume and mist)	

USA OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
Manganese (7439-96-5)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³ (fume)
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	3 mg/m ³
USA IDLH	US IDLH (mg/m ³)	500 mg/m ³
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	5 mg/m ³ (fume)
Chromium (7440-47-3)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.5 mg/m ³
USA IDLH	US IDLH (mg/m ³)	250 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³

II. Exposure Controls

Engineering Controls: Avoid creating or spreading dust. Ensure that dust handling systems such as dust collectors, exhaust ducts, vessels and processing equipment do not leak dust into the work area. If there is a potential for exposure, safety showers and emergency eye wash fountains should be available.

Personal Protective Equipment (PPE): Wear safety glasses with side shields, wear gloves when handling hot or sharp material and if there is insufficient ventilation wear respiratory protection.

SECTION 9, PHYSICAL AND CHEMICAL PROPERTIES

I. Basic Physical and Chemical Properties Information

Physical State	Solid
Appearance	Silvery / Grey extrusion
Odor	None
Odor Threshold	Not applicable
pH	No data available
Evaporation Rate	No data available
Melting Point	1210° F (654°C)
Freezing Point	No data available
Boiling Point	Not applicable
Flash Point	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Flammability (solid, gas)	No data available
Vapor Pressure	Not applicable
Relative Vapor Density at 20° C	No data available
Relative Density	No data available
Density	2.69-2.72g/cm ³ (0.097-0.099 lb/ft ³)
Solubility	Water: None
Partition Coefficient: N-octanol/Water	Not Applicable
Viscosity	No data available

SECTION 10, STABILITY AND REACTIVITY

- I. **Reactivity:** The product is stable under normal conditions and ambient temperature.
- II. **Chemical Stability:** Stable under recommended storage and handling conditions. See Section 7.
- III. **Possibility of Hazardous Reactions:** Hazardous Polymerization will not occur.
- IV. **Conditions to avoid:** Protect from moisture and incompatible materials.
- V. **Incompatible Materials:** Strong acids, bases and oxidizers. Water, and humidity. Alkalis. Corrosive substances in contact with metals may produce flammable hydrogen gas.
- VI. **Hazardous Decomposition Products:** In the case of fire, this material may produce: Oxides of Iron, Oxides of Copper, Oxides of Aluminum and Oxides of Zinc.

SECTION 11, TOXICOLOGICAL INFORMATION

- I. **Routes of Exposure with related Symptoms:**

Inhalation: The most significant route of exposure during processing is by inhalation, breathing, of the fumes. The inhalation of fumes can cause flu-like symptoms known as metal fume fever. A sudden onset of thirst and a sweet, metallic or foul taste in the mouth may follow. The symptoms may be delayed from 4 to 12 hours. Other symptoms may include upper respiratory tract irritation along with coughing, and dryness of the mucous membranes, lassitude and a generalized feeling of malaise. The following symptoms may also occur: fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, profuse sweating, exaggerated mental activity, excessive urination, diarrhea and prostration.

Skin Contact: Could cause severe skin burns. The skin can be irritated by contact with fumes or metal powder. Dust may cause irritation in skin folds or by contact in combination with tight clothing. Mechanical damage caused by flying particles is possible.

Eye Contact: Dust and fumes from processing can cause eye irritation. There is also the possibility of mechanical damage via flying particles.

Ingestion: Ingestion is not considered a potential route of exposure due to the form of the product.

Chronic Symptoms: Iron Oxide is not hazardous, however if the fumes are inhaled undergoing decomposition it may cause irritation and flu-like symptoms. With aluminum, inhalation of finely divided aluminum powder may cause pulmonary fibrosis. Zinc is non-toxic, however prolonged exposure to high concentrations of zinc fumes may cause an involuntary twitching of the muscles known as "zinc shakes". Chromium: Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of studies on the control of diseases of workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion. Silicon: Can cause chronic bronchitis and narrowing of the airways. Manganese: Chronic exposure can cause inflammation of the lung tissue, scarring the lungs, (pulmonary fibrosis). Anemia. Copper: Over exposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, and

lassitude): metallic or sweet taste, discoloration of the skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure.

II. **Information on Toxicological Effects**

Acute Toxicity: Not classified.

Magnesium (7439-95-4)	230 mg/kg
LD50 Oral Rat	
Iron (7439)-89-6)	
LD50 Oral Rat	98.6 g/kg
ATE (Dust Mist)	1.50 mg/l/4h

Skin Corrosion/Irritation: Not classified.

Ph. Level: Not applicable

Serious Eye Damage/Irritation: Not classified

Ph. Level: Not applicable

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Chromium (7440-47-3)	
IARC group	3

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Aspiration Hazard: Not classified

SECTION 12, ECOLOGICAL INFORMATION

I. **Toxicity**

Zinc (7440-66-6)	
LC50 Fish 1	2.16 - 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow through])
EC50 Daphnia 1	0.139 - 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 Fish 2	0.211 - 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-static])
Copper (7440-50-8)	
LC50 Fish 1	≤ 0.0068 (0.0068 - 0.0156) mg /l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 1	0.0426 (0.0426 - 0.0535) mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC 50 Fish 2	0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Other Aquatic Organisms 2	0.031 (0.031 - 0.054) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

Manganese (7439-96-5)	
NOEC Chronic Fish	3.6 mg /l (Exposure time: 96 h - Species: Oncorhynchus mykiss)

II. **Persistence and Degradability**

Copper (7440-50-8)	
Persistence and Degradability	Not readily biodegradable

III. **Bioaccumulative Potential**

No additional information

IV. **Mobility in Soil**

No additional information available

V. **Other Adverse Effects**

Other information: Avoid release to the environment.

SECTION 13, DISPOSAL CONSIDERATIONS

I. **Waste treatment methods**

Sewage Disposal Recommendations: Dispose of this material and it's container in a safe way. Do not empty into drains.

Additional information: Recycle the material as far as possible.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14, TRANSPORT INFORMATION

- I. **In accordance with DOT** Not regulated for transport.
- II. **In accordance with IMDG** Not regulated for transport.
- III. **In accordance with IATA** Not regulated for transport.

SECTION 15, REGULATORY INFORMATION

I. **US Federal Regulations**

Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0% (dust or fume only)
Silicon (7440-21-3)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	
Zinc (7440-66-6)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0% (dust or fume only)
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0%
Magnesium (7439-95-4)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	

Iron (7439-89-6)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	
Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0%
Chromium (7440-47-3)	
Listed on the United States TSCA (Toxic Substance Control Act) inventory	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0%

II. **US State Regulations**

Aluminum (7429-90-5)	
U.S. - Massachusetts - Right to Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - Right to Know - Environmental Hazard List	
U.S. - Pennsylvania - Right to Know List	
Silicon (7440-21-3)	
U.S. - Massachusetts - Right to Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - Right to Know List	
Zinc (7440-66-6)	
U.S. - Massachusetts - Right to Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - Right to Know - Environmental Hazard List	
U.S. - Pennsylvania - Right to Know List	
Copper (7440-50-8)	
U.S. - Massachusetts - Right to Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - Right to Know - Environmental Hazard List	
U.S. - Pennsylvania - Right to Know List	
Magnesium (7439-95-4)	
U.S. - Massachusetts - Right to Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - Right to Know List	
Manganese (7439-96-5)	
U.S. - Massachusetts - Right to Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - Right to Know - Environmental Hazard List	
U.S. - Pennsylvania - Right to Know List	
Chromium (7440-47-3)	
U.S. - Massachusetts - Right to Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - Right to Know - Environmental Hazard List	
U.S. - Pennsylvania - Right to Know - Special Hazardous Substances	
U.S. - Pennsylvania - Right to Know List	

SECTION 16, Other Information

- Revision Date** April 27, 2016 (04/27/2016)
- Other Information** Prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR1910.1200
- Disclaimer** The information in the sheet was written based on the best knowledge and experience currently available and is intended for the purposes of health, safety and environmental requirements only. It does not guarantee any specific property of the product

Key/Legend

- ACGIH** American Conference of Governmental Industrial Hygienists
- CAS** Chemical Abstract Services
- CERCLA** Comprehensive Environmental Response, Compensation and Liability Act
- CFR** Code of Federal Regulations
- DOT** Department of Transportation
- EC** Effective Concentration
- EPA** Environmental Protection Agency
- GHS** Globally Harmonized System
- IARC** International Agency for Research on Cancer
- IATA** International Air Transport Association
- IDLH** Immediately Dangerous to Life or Health
- IMDG** International Maritime Dangerous Goods code
- LC** Lethal Concentration
- NIOSH** National Institute for Occupational Safety and Health
- OSHA** Occupational Safety and Health Administration
- SARA** Superfund Amendments and Reauthorization Act
- STEL** Short Term Exposure Limit