

# MATERIAL SAFETY DATA SHEET

Product Name: ALUMINUM ALLOYS, 3XXX

## SECTION I. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** ALUMINUM ALLOYS, 3XXX

**Product Code:** 20-800013

**Synonyms:** Aluminum

**Manufacturer:** Anenda Systems, Inc. – AL 13  
2-606 Meridith Road  
Calgary NE, Alberta  
Canada T2E 5A8

**E-mail:** info@al13.ca  
**Website:** www.al13.ca  
**Phone:** 1-855-438-2513

## SECTION II. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**WARNING!** Welding, sawing, brazing, grinding and machining may cause dust and/or fumes to be released. These fumes may be harmful if inhaled and may irritate the eyes, skin and respiratory tract. Molten material may cause thermal burns.

### Properties:

- **Physical State:** Solid
- **Appearance:** Silvery
- **Odor:** None
- **Non-flammable** as supplied or applicable

### ROUTE(S) OF ENTRY

#### Potential Health Effects (Acute and Chronic)

Aluminum products in their solid state under normal conditions, do not present an inhalation, ingestion or skin hazard. However, operations resulting in fumes or particulate formation such as sawing, brazing, grinding and machining may present health hazards.

#### LD 50/LC 50

No data available.

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## Signs and Symptoms of Exposure

**Eyes:** Over-exposure to dust may cause irritation.

**Skin:** Skin contact very unlikely, but may cause irritation.

**Ingestion:** Not likely.

**Inhalation:** Not likely unless material is machined, welded or melted. Short term exposure to welding fumes may result in discomfort.

## WARNING

This product does contain carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

This product does contain amounts of material considered hazardous by OSHA, Hazards Communication Standard (29 CFR 1910.1200).

## Medical Conditions Generally Aggravated by Exposure

Asthma, chronic lung disease and skin rashes.

(THRESHOLD LIMIT VALUE: SEE SECTION III).

## SECTION III. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components (Chemical Name)	CAS#	Concentration	OSHA TWA	ACGIH TLV	OSHA CEIL
Magnesium	7439-95-4	0.0-1.6%		10 mg/m <sup>3</sup>	
Aluminum	7429-90-5	>95.0%		(dust)	
Manganese	7439-96-5	0.0-1.6%		0.2mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Chromium	7440-47-3	0.0-0.35%	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	
Iron	65996-67-0	<0.75%			

## Other Exposure Limit Information

**Ingredient:** Aluminum (as dust) limit, 5.0 mg/m<sup>3</sup>, 1984-85 ACGIH OSHA 1910.1000

Base Metal % Composition by Weight TLV (mg/m<sup>3</sup>) \* TWA (mg/m<sup>3</sup>)\*\*

**Aluminum** 80.0-99.7 10.0 as metal not established

Dust and Oxide

5.0 As welding\*\*

Fume

Maximum % Composition by Weight 1984-85 ACGIH OSHA 1910.1000

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**Alloying Element** 1.0-10.0 1.0-20.0 TLV(mg/m<sup>3</sup>)\* TWA(mg/m<sup>3</sup>)\*\*

**Cobalt, Co** W, P 0.1 0.1

**Copper, Cu** W P 0.2, As Fume 0.1, As Fume

**Iron, Fe** W, P 5.0, As Fume 10.0, As Fume

**Magnesium, Mg** W P 10.0, As Fume 15.0, As Fume

**Manganese, Mn** W 10.0, As Fume 15.0, Ceiling

**Silicon, Si** W, P 10., As Total Dust Not Estab.

5.0 As Respirable “ “

Dust

**Tin, Sn** P 2.0, As Oxide and 2.0, As Metal Inorganic

## Compounds

**Zinc, Zn** W, P 5. As Fume 5.0, As Fume

## KEY:

**W**=Wrought Aluminum (Fabricated Products)

**P**=Prime and Ingot Hardener Aluminum

**\*TLV**=Threshold Limit Value

**\*\*TWA**=Time-Weighted Average

## NOTE

Aluminum alloys may be comprised of all or variations of the alloys shown here. In addition, the welding of Aluminum Alloys may produce the products listed in Section VIII, herein.

## SECTION IV. FIRST AID MEASURES

### Emergency and First Aid Procedures

**Eyes:** Flush with warm water for at least 15 minutes. If irritation persists, get medical attention.

**Skin:** Remove particles by thoroughly washing with soap and water.

**Ingestion:** Not applicable.

**Inhalation:** Remove to fresh air.

## SECTION V. FIRE FIGHTING MEASURES

**Flash Pt.:** NR

**Method Used:** Unknown

**Explosive Limits:**

LEL: NR UEL: NR

**Auto ignition Pt.:**

NR

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## Fire Fighting Instructions

Do not use water on dust. Water produces ammonia, methane and hydrogen, which are highly flammable. Stay away from end of tanks. For massive fire in cargo/storage area, use unmanned hose holder and monitor nozzles. If this is impossible, withdraw from area and let fire burn. Damp Aluminum dust may spontaneously heat with liberation of hydrogen to form explosive mixtures.

Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

## Flammable Properties and Hazards

Damp Aluminum dust may spontaneously heat with the liberation of hydrogen to form explosive air mixtures.

## Extinguishing Media:

Class D extinguishing media, fluxing salts, sodium chloride powder or dry sand.

## SECTION VI. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** In its molten format, this material is a water pollutant. If water pollution occurs, notify appropriate authorities.

**Methods for Containment:** If molten, contain the fire by using sand or alumina as a ban. Do not attempt to halt flow of metal with shovels or hand tools.

**Methods for Clean-Up:** Clean up spilled material manually and place on approved dry containers away from water and humidity. If wet, do not store in airtight containers.

## SECTION VII. HANDLING AND STORAGE

### Precautions to be Taken in Handling

Keep away from halogen acids and sodium hydroxide which may generate explosive mixtures of hydrogen. Finely divided aluminum may form explosive mixtures in air. The welding of aluminum alloys may generate carbon monoxide, carbon dioxide, ozone, nitrogen oxides, infrared radiation and ultraviolet radiation.

**Other Precautions:** NA

## SECTION VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

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## **Respiratory Equipment (Specify Type)**

Personal protective equipment, including use of NIOSH approved respirator is required when machining, grinding, welding or remelting this product.

## **Eye Protection**

Wear impervious gloves to avoid repeated or prolonged skin contact with residual oils and to avoid injury.

## **Protective Clothing**

Wear appropriate clothing, including a long-sleeved shirt, etc., to prevent skin irritation. Appropriate personal protective equipment is required when melting, casting, machining, forging or otherwise processing. The nature of the processing activity will determine what format of equipment is necessary, i.e., glasses, respirator, protective clothing and ear protection.

## **Engineering controls (Ventilation, etc.)**

Use with adequate ventilation.

## **ADDITIONAL INFORMATION**

1. Halogen acids and sodium hydroxide in contact with aluminum may generate explosive mixtures of hydrogen.
2. Finely divided aluminum will form explosive mixtures in air. It will also form explosive mixtures in air in the presence of bromates, iodates or ammonium nitrate.
3. When remelting aluminum scrap, entrapped moisture or the presence of strong oxidizers such as ammonium nitrate could cause an explosion. This applies to the collection of moisture in sow cavities as well. Moisture must be driven off prior to remelting.
4. Do not touch cast aluminum metal or heated aluminum product without knowing metal temperature. Aluminum experiences no color change during heating. If metal is hot and touched, burns can result.
5. Aluminum powder must be [packaged and shipped as a flammable solid, UN1396.
6. Hard alloy ingots in the 2000 and 7000 series must be stress-relieved to prevent explosion when sawed.
7. The welding of aluminum alloys may generate carbon monoxide, carbon dioxide, ozone, nitrogen oxides, infrared radiation and ultraviolet radiation.

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## SECTION IX. PHYSICAL AND CHEMICAL PROPERTIES

Physical States: Solid  
Melting Point: NR  
Boiling Point: NR  
Auto ignition Point: NR  
Flash Point: NR Method Used: Unknown  
Explosive Limits: LEL: NR UEL: NR  
Specific Gravity (Water=1): 2.7-2.9  
Vapor Pressure (vs. Air or mm Hg): NR  
Vapor Density (vs. Air=1): NR  
Evaporation Rate (vs. Butyl Acetate=1) NR  
Solubility in Water: NIL  
Percent Volatile: NR  
Viscosity: NR  
pH: NR  
Appearance and Odor:  
Color: Silver gray  
Odor: Not Applicable  
Odor Threshold: Not Applicable  
Water Reactivity: No data  
Density: 2.702 g/mL  
Material Is (At Normal Conditions): Solid

## SECTION X. CHEMICAL STABILITY AND REACTIVITY INFORMATION

**Stability:** Stable

**Conditions to Avoid – Instability:**

This material is stable under normal conditions of handling.

**Incompatibility – Materials to Avoid:**

Anhydrous bromine, halocarbons, mercury (amalgam) chlorine, iodine (aluminum + barium, nitrate + barium, nitrate + potassium, nitrate + sulfur + organic matter).

**Hazardous Decomposition or Byproducts:**

In particulate form (small chips, dust), aluminum reacts with water and air humidity, strong basic solutions, strong acidic solutions, halogenated acids, producing flammable hydrogen gas.

Hazardous Polymerization: Will not occur

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## SECTION XI. TOXICOLOGICAL INFORMATION

No specific information available on this product.

**Carcinogenity:** NTP: No IARC Monographs: No OSHA Regulated: No

## SECTION XII. ECOLOGICAL INFORMATION

No specific information available on this product.

## SECTION XIII. DISPOSAL CONSIDERATIONS

### **Waste Disposal Method**

Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. Dispose of in accordance with all applicable federal, state and local health and environmental regulations.

Prevent materials from entering drains, sewers or waterways.

Ensure that all responsible federal, state and local agencies receive notification of spill and disposal methods.

## SECTION XIV. TRANSPORT INFORMATION

### **LAND TRANSPORT (US DOT)**

DOT Proper Shipping Name

DOS Hazard Class: 4.1

DOT Hazard Label: Flammable Solid

HAZARD CLASS: 4.3 Dangerous When Wet

## SECTION XV. REGULATORY INFORMATION

No Data Available.

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## SECTION XVI. OTHER INFORMATION

The information contained herein is based on data considered to be accurate. However, no warranty is expressed or implied regarding the accuracy of this data or the results we obtained from the use thereof. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in its use, storage and handling of material.

Flammability: 0

Health: 1

Instability: 1

### KEY:

Minimal: 0

Slight: 1

Moderate: 2

Serious: 3

Extreme: 4