



# UNITED ALUMINUM CORPORATION

100 United Drive, North Haven, CT 06473, USA  
 Tel: (203) 239-5881 Fax: (203) 239-4441

## Safety Data Sheet

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Date: 24 April 2018
Supersedes: April 2016

This Safety Data Sheet (SDS) is provided as a courtesy in response to a customer request. This product is not regulated under, and a SDS is not required for this product by the OSHA Hazard Communication Standard (29 CFR 1910.1200) because, when used as recommended or under ordinary conditions, it should not present a health and safety hazard. However, use or processing of the product not in accordance with the product's recommendations or not under ordinary conditions may affect the performance of the product and may present potential health and safety hazards.

### SECTION 1: Product and Company Identification

- 1.1 Material** Aluminum Alloys for coils and sheets, including 1XXX, 2XXX, 3XXX, 4XXX, 5XXX, 6XXX, 7XXX, brazing alloys, and United Aluminum designated alloys, usually give a 9xxx designation such as 9020.
- 1.2 Manufacturers Information** United Aluminum Corp.  
 100 United Drive  
 North Haven, Connecticut, USA 06473  
 Phone: 1-203-239-5881
- 1.3 Emergency Contact** Within USA/Canada: 1-800-424-9300  
 Outside USA/Canada: +1 703-527-3887

### SECTION 2: Health Hazard Information

Classification of the substance or mixture Classification EC 67/548 or EC 1999/45: Not classified  
 Hazard Class and Category Code Regulation EC 1272/2008 (CLP): Not regulated

Acute Health Effects	
General	Low toxicity Aluminum metal in most forms is non-toxic. It is not readily absorbed through the skin or gastro-intestinal tract and only poorly through the lungs.
Eyes	Due to product form, irritation is not expected unless cut or heated and dust or fumes generated. Aluminum dust may cause eye discomfort and irritation, pain, redness and conjunctivitis.
Skin	Due to product form, irritation is not expected unless cut or heated and dust or fumes are generated. If heated contact with hot surfaces is likely to cause blisters and burns. Aluminum dust may be abrasive to the skin and cause discomfort.
Inhaled	Aluminum metal is essentially non-toxic. Inhaling aluminum dust or fumes may be discomforting to the upper respiratory tract.
Swallowed	The solid is regarded as non - toxic and due to product form ingestion is unlikely
Chronic Health Effects	There are known chronic health effects associated with aluminum metal. Fumes of certain alloying elements in aluminum may result in upper respiratory irritation. If aluminum is welded, prolonged or repeated inhalation of metal fume may cause dizziness, respiratory irritation and nausea. Exposure to fumes from smelting and abrasive manufacture can initiate pulmonary fibrosis.



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## Precautionary Statements:

- Does not pose any health hazard under normal conditions of use and as delivered.
- Fine particles from processing (grinding, cutting, polishing and welding) may be readily ignitable, and needs to be controlled.
- Fine particles in contact with water or humidity in air may release flammable gases in hazardous quantities, and may, in some cases, set off thermal reactions in contact with iron oxide and certain other metal oxides.
- For liquid aluminum there is a risk of explosions if in contact with water, and reacts violently in contact with rust, oxides of some other metals or nitrate.

## SECTION 3: Composition/Information on Ingredients

The following contents are applicable aluminum supplied by United Aluminum.

Substance		Identification Number		Content (wt %)	
Name	Symbol	CAS No.	EC No.	Min (%)	Max (%)
Aluminum	Al	7429-90-5	231-072-3	75.0	99.9
Silicon	Si	7440-21-3	231-130-8	0.0	14.0
Iron	Fe	7439-89-6	231-096-4	0.0	2.0
Magnesium	Mg	7439-95-4	231-104-6	0.0	6.0
Manganese	Mn	7439-96-5	231-105-1	0.0	2.0
Zinc	Zn	7440-66-6	231-175-3	0.0	7.0
Copper	Cu	7440-50-8	231-159-6	0.0	6.0
Chromium	Cr	7440-47-3	231-157-5	0.0	0.4
Nickel	Ni	7440-02-0	231-111-4	0.0	0.2
Titanium	Ti	7440-32-6	231-142-3	0.0	0.25
Bismuth	Bi	7440-69-9	231-177-4	0.0	0.20
Boron	B	7440-42-8	231-151-2	0.0	0.05
Gallium	Ga	7440-55-3	231-163-8	0.0	0.05
Vanadium	V	7440-62-2	231-171-1	0.0	0.05
Zirconium	Zr	7440-67-7	231-176-9	0.0	0.20

## SECTION 4: First Aid Measures

First Aid Procedures	
Eye Contact	Dust and fumes from processing: Rinse eyes with plenty of water or saline for at least 15 minutes, consult a physician.
Skin Contact	Dust and fume from processing: wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Inhalation	Dust and fumes from processing: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. Provide cardiopulmonary resuscitation for persons without pulse or respiration. Consult a physician.
Inhaled	Aluminum metal is essentially non-toxic. Inhaling aluminum dust or fumes may be discomforting to the upper respiratory tract.
Ingestion	Not applicable



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## SECTION 5: Fire Fighting Measures

Fire Fighting Measures	
Flammable/Combustion Properties	This product does not present a fire or explosion hazard as shipped. Small chips, fine turnings and dust from processing may be ignitable.
Fire/Explosion Hazards	May be a potential hazard under the following conditions. Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions.
	Chippings fines and dust in contact with water can generate flammable/explosive hydrogen gas; this gas could present an explosion hazard in poorly ventilated spaces.
	Dust and fines in contact with certain metal oxides (e.g. iron, copper) can create a thermite reaction with considerable heat generation, which can be initiated by a weak ignition source.
	Molten metal in contact with water/moisture if entrapped can lead to violent reaction leading to explosion.
Extinguishing Media	
Suitable Extinguishing Media	Use class D extinguishing agents on fines, dusts or molten metal. Use course water spray on chipping and turnings.
Unsuitable Extinguishing Media	DO NOT USE water in fighting fires around molten metal or halogenated extinguishing agents on small chippings or fines.
Protection of Fire-fighters	Fire Fighters should use approved positive pressure, self-contained breathing apparatus and full protective clothing.

## SECTION 6: Accidental Release Measures

### Spill or Leak Procedure:

- Pick up mechanically
- Collect scrap for recycling
- If molten, contain flow using dry sand or salt flux as a dam. All tooling (e.g. shovels or hand tools) and containers that come into contact with molten metal must be preheated or specially coated, rust free and approved for such use.

## SECTION 7: Handling and Storage

### Handling:

- Keep material dry
- Avoid generating dust
- Avoid contact with sharp edges or heated metal
- Hot and cold metal are not visibly different.
- Hot aluminum does not glow red.



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## Requirements for processes that generate dusts or fines:

- Local ventilation and vacuum system must be designed to handle explosive dusts
- Dust collection systems must be dedicated to aluminum dust only
- Avoid all ignition sources
- Good housekeeping practices must be maintained
- Dust accumulation on ledges can present a risk of ignition

## SECTION 8: Exposure Controls

### 8.1 Control Parameters of Nuisance Dust

Substance		Identification Number		Exposure	
Name	Symbol	CAS No.	EC No.	Total part, mg/m <sup>3</sup>	Respirable part, mg/m <sup>3</sup>
Aluminum	Al	7429-90-5	231-072-3	10	4
Silicon	Si	7440-21-3	231-130-8	10	4
Iron	Fe	7439-89-6	231-096-4	10	4
Magnesium	Mg	7439-95-4	231-104-6	10	4
Manganese	Mn	7439-96-5	231-105-1	0.2	0.02
Zinc	Zn	7440-66-6	231-175-3	5	
Copper	Cu	7440-50-8	231-159-6	1.0	0.1
Chromium	Cr	7440-47-3	231-157-5	2	
Nickel	Ni	7440-02-0	231-111-4	0.1	
Titanium	Ti	7440-32-6	231-142-3	10	4
Bismuth	Bi	7440-69-9	231-177-4		5
Boron	B	7440-42-8	231-151-2		5
Gallium	Ga	7440-55-3	231-163-8		5
Vanadium	V	7440-62-2	231-171-1	0.5	
Zirconium	Zr	7440-67-7	231-176-9		1.0

### 8.2 Exposure Controls:

#### Personal Protective Equipment:

- Eye/face Protection: Wear safety glasses with side shields  
Welding mask with sufficient lens factor for welding
- Skin Protection: Wear impervious gloves to avoid repeated or prolonged skin contact with residual oils  
Long sleeves/pants (non-flammable where required)  
Leather aprons/bodily protection for welding
- Hand Protection: Puncture resistant gloves for handling solids
- Foot Protection: Safety boots (steel toed for handling bulk solids)
- Respiratory Protection: Approved NOISH respirator for process (dust or fumes) as required



## SECTION 9: Physical and Chemical Properties

### Physical and Chemical Properties:

- Appearance: Silver colored metal
- Odor: No odor
- Solubility in water: Negligible
- Vapor Density: Not applicable
- Vapor Pressure: Negligible at 25°C (1 mmHg at 1248°C)
- Melting Point: 660°C (1220°F)
- Boiling Point: 2450°C (4442°F)
- Specific gravity: 2.7 g/cm<sup>3</sup>
- Flashpoint: Not relevant
- Flammability limits: Non flammable
- Volatile Components: 0%

## SECTION 10: Stability and Reactivity

- Aluminum alloys are stable at normal room temperature under normal storage and handling conditions.
- Chippings, fines and molten are considerably more reactive when exposed to water, heat acids and alkalis or metal oxides.
- Keep water/water vapor clear of molten form (reacts violently)
- May corrode in contact with dissimilar metals, acids and alkalis
- Dust is a strong oxidizer with considerable heat generation

## SECTION 11: Toxicological Information

- Aluminum dust/fines and fumes have low health risk by inhalation. Generally considered biological inert (milling cutting and grinding)
- Some products are supplied with an oil coating or have residual oil from the manufacturing process. Oil can cause irritation of the skin, which with prolonged or repeated contact can cause dermatitis.

## SECTION 12: Ecological Information

Ecological hazards for solid aluminum alloys are minimal (not including processing or melting)

### Ecotoxicity:

- There is little tendency for bioaccumulation along the food chain

### Environmental Degradation:

- In water, aluminum will eventually precipitate in sediments.
- Aluminum alloys may dissolve in salt water



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## SECTION 13: Disposal Considerations

- Reuse or recycle material whenever possible
- Dispose of non-recyclable waste as per Local, State, Federal or National regulation

## SECTION 14: Transport Information

Aluminum is considered stable under normal handling conditions, but must be kept clean and dry during transport.

## SECTION 15: Regulatory Information

Not applicable.

## SECTION 16: Other Information

### Disclaimer:

The information above is believed to be accurate and represents the best information currently available to United Aluminum Corp. However, United Aluminum Corp. makes no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use.

Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall United Aluminum Corp. be liable for any claims, losses or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if United Aluminum Corp. has been advised of the possibility of such damages.

