

R-342-81(7)

Label No.  
5108

# WROUGHT ALUMINUM PRODUCTS

## 8xxx Series Alloys

**WARNING:** This product is not a physical or health hazard in bulk form. Welding or machining aluminum may generate dusts and fumes which may cause eye, nose, and throat irritation. Ozone may be emitted as a by-product during welding or plasma arc cutting. Prolonged exposure to ozone may result in nausea, headache, and lung damage. Suspended aluminum dust, allowed to accumulate in a confined area, may be explosive. Nickel and chromium are listed by the International Agency for Research on Cancer and the National Toxicology Program as carcinogens.

**Molten metal can explode** — If remelted, make certain no water or moisture is present in cavities or on external surfaces.

For further information, refer to Reynolds Material Safety Data Sheet.

Ingredients	CAS Number
Aluminum	7429905
Silicon	7440213
Iron	7439896
Manganese	7439965
Chromium	7440473
Nickel	7440020
Zinc	7440666



REYNOLDS METALS COMPANY  
P. O. Box 27003  
Richmond, Virginia 23261-7003

*This label is required by the OSHA Hazard Communication Standard.*

**MATERIAL SAFETY DATA SHEET**

("Essentially Similar" to Form OSHA-174)

REYNOLDS METALS COMPANY R-1087-19

DATE PREPARED  
7/31/90REVISION DATE  
7/07/93MSDS #  
5108**SECTION 1 - MATERIAL IDENTIFICATION**

MANUFACTURER: Reynolds Metals Company  
P. O. Box 27003  
Richmond, Virginia 23261-7003

EMERGENCY TELEPHONE NUMBER:  
(804) 281-2265

PRODUCT CLASS: Wrought Aluminum Alloy  
TRADE NAME: 8XXX Series Alloys  
(for alloy 8111 see MSDS #5232)

MANUFACTURER'S CODE IDENTIFICATION  
8XXX Series; RA195; MD209; MD348; MD358; R396;  
R402

**SECTION 2 - HAZARDOUS INGREDIENTS OF MATERIAL**

Hazardous Ingredients	Typical Percent	OSHA PEL			ACGIH TLV			CAS Numbers
		Respirable Gas ppm	Total Dust/Mist mg/m <sup>3</sup>	Total Dust mg/m <sup>3</sup>	Respirable Gas ppm	Total Dust/Mist mg/m <sup>3</sup>	Total Dust mg/m <sup>3</sup>	
Aluminum **	min 94.0		5	15		5	10	7429-90-5
Silicon	max 1.1		5	15			10	7440-21-3
Iron	max 2.0		10			5		7439-89-6
Manganese **	max 1.5		5C*			1	5	7439-96-5
Chromium **	max 0.2			1			0.5	7440-47-3
Nickel **	max 1.3			1			0.05	7440-02-0
Zinc **	max 1.8		5	15		5	10	7440-66-6

\* "C" indicates ceiling value  
On SARA Section 313 list.

**SECTION 3 - PHYSICAL DATA OF MATERIAL**

BOILING POINT: N/A  
SPECIFIC GRAVITY: 2.5-2.9  
VAPOR PRESSURE: N/A  
VAPOR DENSITY: N/A  
COEFFICIENT OF WATER/OIL DIST: N/A  
ODOR THRESHOLD: N/A

FREEZING POINT: 598-651C  
SOLUBILITY IN WATER: N/A  
PHYSICAL STATE: Solid  
pH: N/A  
EVAPORATION RATE: N/A  
APPEARANCE/ODOR: Odorless, silvery gray color

**SECTION 4 - FIRE AND EXPLOSION HAZARD OF MATERIAL**

FLAMMABILITY: YES? NO? X  
FLASH POINT (Method Used): N/A

WHAT CONDITIONS? N/A  
UEL: N/A  
LEL: N/A

**MEANS OF EXTINCTION:**

This product is non-combustible in bulk form. For fires involving aluminum fines or chips, use dry sand or Class D extinguishing agents approved for this use. DO NOT USE water or other liquids, foam, or halogenated extinguishing agents.

**SPECIAL PROCEDURES:**

Suspended aluminum dust, allowed to accumulate in a confined area, may be explosive. If remelted, moisture present in cavities or on external surfaces may cause an explosion.

MINIMUM IGNITION TEMPERATURE: N/A

HAZARDOUS COMBUSTION PRODUCTS: None known

SENSITIVITY TO IMPACT: None known

SENSITIVITY TO STATIC DISCHARGE: None known

ND = NOT DETERMINED

N/A = NOT APPLICABLE

## SECTION 5 - REACTIVITY DATA

CHFA FL STABILITY: Stable

REACTIVITY AND UNDER WHAT CONDITIONS:

If remelted, moisture present in cavities or on external surfaces may cause an explosion. Bulk aluminum dust when damp may heat spontaneously.

INCOMPATIBILITY TO OTHER SUBSTANCES: YES

For aluminum fines: water, some acids, alkalis, and halogenated compounds. See NFPA#491M for specific incompatible materials. National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

HAZARDOUS DECOMPOSITION PRODUCTS:

Finely divided aluminum reacts with water, some acids, and alkalis to produce hydrogen gas. Aluminum in contact with halogenated compounds can produce violent reactions and/or explosions.

## SECTION 6 - TOXICOLOGICAL PROPERTIES OF PRODUCT

ROUTE(S) OF ENTRY:

INHALATION? YES  
EYE CONTACT? YES

INGESTION? NO  
SKIN ABSORPTION? NO

EFFECTS OF ACUTE EXPOSURE:

Aluminum is considered a nuisance particulate. Welding or machining aluminum may generate dusts and fumes which may cause eye, nose, and throat irritation. Generally, if exposures for aluminum oxide are kept below the exposure limit, the alloy components should not present a health risk. Ozone may be emitted as a by-product during welding or plasma arc cutting. Exposure to ozone may produce irritation to eyes, nose, and throat. Welding and/or plasma arc cutting of aluminum alloys generates ultraviolet radiation which can cause skin burns welders flash to unprotected skin and eyes.

EFFECTS OF CHRONIC EXPOSURE:

Prolonged exposure to ozone may result in nausea, headache, and pulmonary damage. Nickel, chromium and certain of their compounds are classified as carcinogens in the latest Annual Report on Carcinogens as published by the National Toxicology Program (NTP) and by the International Agency for Research on Cancer (IARC).

LD50 OF PRODUCT:

Aluminum - Not known  
Silicon - orl-rat 3160mg/kg  
Iron - Not known  
Manganese - orl-rat 9000mg/kg  
Chromium - Not known  
Nickel - Not known  
Zinc - Not known

LC50 OF PRODUCT:

Aluminum - Not known  
Silicon - Not known  
Iron - Not known  
Manganese - Not known  
Chromium - Not known  
Nickel - Not known  
Zinc - Not known

IRRITANCY OF PRODUCT: Mild

EXPOSURE LIMITS OF PRODUCT:

Use levels for specific ingredients shown in Section 2.

SENSITIZATION TO PRODUCT: Skin - Nickel

SYNERGISTIC MATERIALS: None known

MUTAGENICITY: NTP, IARC, ACGIH

REPRODUCTIVE EFFECTS: None known

MUTAGENICITY: None known

MUTAGENICITY: None known

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Pre-existing upper respiratory and lung diseases such as, but not limited to, Bronchitis, Emphysema, and Asthma

---

**SECTION 7 - PREVENTIVE MEASURES**

---

**PERSONAL PROTECTIVE EQUIPMENT:**

RES: As needed.

EYEWEAR: Safety glasses, goggles, face shield, or welding helmet, etc., as needed.

RESPIRATORY: Use NIOSH/MSHA-approved respirator for dusts/fume/mist, if TLVs or PELs are exceeded.

FOOTWEAR: Safety shoes, as needed.

**CLOTHING:**

Appropriate welding protective equipment. If remelted, see Aluminum Association publication "Guidelines for Handling Molten Aluminum", #69. The Aluminum Association, 900 19th St., N.W., Suite 300, Washington, D.C. 20006.

**ENGINEERING CONTROLS:**

If ventilation is used to convey aluminum dust, generated by grinding, sawing, etc., special ventilation procedures may be necessary to avoid explosion hazards. See National Fire Protection Association codes #65 and #651 (See address in Section 5).

LEAK AND SPILL PROCEDURE: If remelted, see Aluminum Association publication #69 listed above.

**WASTE DISPOSAL:**

For disposal of this material as a waste, act in accordance with all applicable federal, state, and local waste management regulations.

WORKING PROCEDURES AND EQUIPMENT: See Aluminum Association publication #69 listed above.

STORAGE REQUIREMENTS: If remelted, make certain no water or moisture is present in cavities or on external surfaces.

SPECIAL SHIPPING INFORMATION: None known

---

**SECTION 8 - FIRST AID MEASURES**

---

SKIN: For minor burns, apply cold water. For severe burns, seek immediate medical attention.

EYES: Immediately flush with water for 15 minutes. Seek medical attention if irritation persists.

INHALATION: Remove to fresh air.

INGESTION: None necessary.

---

**SECTION 9 - SPECIAL PRECAUTIONS AND COMMENTS**

---

A

This product contains a chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

**HMIS RATINGS**

Health: 1

Flammability: 1

Reactivity: 1

---

All statements, technical information and recommendations contained herein are based on tests and data which this Company believes to be currently reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use. Since the Company shall have no control of the use of the product described herein, the Company assumes no liability for loss or damage incurred from the proper or improper use of such product.

