

When handling this material, accumulation of dust and creation of dust clouds should be avoided. Prior to shipment, the material should be dry and cooled to ambient temperature. Shipment should be in closed containers, covered trailers, or covered hopper cars.

Wear appropriate eye protection to prevent any possibility of eye contact. Take appropriate safeguards (e.g., wear protective clothing) as necessary to prevent irritation.

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#### Section IX - Regulatory Information

Chemical substance components have been reported to the EPA Office of Toxic Substances in accordance with the requirements of the Toxic Substances Control Act (Title 40 CFR Part 710).

Nickel and chromium are listed by Pennsylvania as "Special Hazardous Substances" under Pennsylvania Worker and Community Right-to-Know Regulations. Nickel and hexavalent chromium are known to the State of California to cause cancer (California Prop. 65).

For purposes of SARA Title III reporting, this substance contains the following listed ingredients that may be above or near deminimus levels:

CERCLA List - Chromium  
Section 313 List - Aluminum (fume / dust) and Chromium

This material fits the EPA Hazard Category definition of Delayed (Chronic) Health Hazard under SARA 311 and 312.

DOT Shipping Name, Hazard Class, ID No. - Not Regulated if dry and/or cold.

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The information herein is given in good faith and is authoritative and valid; however, no warranty, express or implied, can be made.

Exposure to zinc oxide fume subsequent to burning, welding, and molten metal work can result in "zinc chills" (metal fume fever). Temporary symptoms can include fever, chills, nausea, vomiting, and muscular pain. Exposure to dust / fines presents a low health risk by inhalation.

Exposure to magnesium oxide fume subsequent to burning, welding, and molten metal work can result in metal fume fever. Temporary symptoms can include fever, chills, nausea, vomiting, and muscular pain. Exposure to magnesium metal or oxide dust should be a low health risk by inhalation and should be treated as a nuisance dust.

Potential for overexposure to copper fume may exist when handling material. Overexposure to copper fume can result in upper respiratory tract irritation, nausea, and metal fume fever.

Overexposure to manganese oxide fumes may cause metal fume fever. Chronic overexposure to manganese fumes may cause nervous system disorders, (e.g., Parkinsonian - type symptoms), pneumonitis, and fibrosis of lung tissue.

Exposure to iron oxide dust or fume has not been associated with physical impairment of lung function. High exposures to iron oxide can cause x-ray changes (siderosis or iron pigmentation) in the lungs as a result of long-term exposure. Siderosis is a benign condition and is not associated with pulmonary fibrosis.

Chronic exposure to inert dusts of silicon may cause increased airways resistance and contribute to chronic bronchitis. Intratracheal administration of silicon in rabbits produced significant pulmonary lesions.

In general, Aluminum dust / fines present a low health risk. High concentrations of dust may be physically irritating due to abrasive action. Prolonged or repeated exposure to fine aluminum powder may cause scarring of lung tissue (pulmonary fibrosis).

**First Aid :**      Inhalation -      If irritation or pulmonary symptoms develop, consult a physician.  
                        Skin and eyes -      If skin or eye irritation develops, consult a physician.  
    If eye contact occurs, flush eyes with copious amounts of water for at least 15 minutes.

#### Section VII - Spill, Leak & Disposal Procedures

Clean up spilled materials and place in a dry metal containers. Keep product dry and keep in closed, water-tight containers. Material should be recycled for reclamation of metal content. This material does not currently have a RCRA Hazardous Waste Number.

#### Section VIII - Special Protection and Precautions

Use with adequate ventilation to meet all occupational exposure limits as listed in Section II. Where the exposure limit may be exceeded, use NIOSH approved respiratory protection. Select the appropriate respirator (dust and fume respirator, etc.) based on the actual or potential airborne contaminants and their concentrations present.

**Section III - Physical Data**

Physical Form:	Solid ingots ranging in diameters of 6" to 11" and in lengths of 15" to 216"
Boiling Temperature:	Not applicable
Melting Temperature:	900 - 1200 °F
Vapor Pressure:	Not applicable
Evaporation Rate:	Not applicable
Specific Gravity:	2.3 - 3.0 gms/cc
Density:	1.46 - 1.91 lbs./ft. <sup>3</sup>
Water Solubility:	Slight
pH:	11.5 (Max. of saturated solution)
Color:	Silver / Gray
Odor:	Not applicable

**Section IV - Fire and Explosion Data**

Flash Point: Not applicable      Auto Ignition Temp: Not applicable      LEL/UEL: Not applicable

For fire extinguishing, when molten or superheated aluminum is involved, use an approved Class D extinguishing agent. Do not use water. If a Class D agent is not available, use fluxing salts or dry sand to surround the burning area and to smother the burning. Allow fire to burn itself out.

Firefighters should use NIOSH approved self-contained breathing apparatus and full protective clothing when appropriate.

Prevent formation of a dust cloud. Aluminum fines and powder in a dry and finely divided state can pose a dust explosion hazard.

**Section V - Reactivity Data**

Water or moisture -	Molten aluminum may explode on contact with water.
Heat -	Oxidizes at a temperature - dependent rate.
Strong oxidizers -	Violent reaction with much heat generation (e.g. metal oxides and nitrates).
Acids and alkalis -	Reacts to generate hydrogen.
Halogenated compounds -	Halogenated hydrocarbons can react violently with finely divided aluminum.

**Section VI - Health Hazard Information**

Exposure to nickel dust and fume in excess of recommended limits has been associated with pneumoconiosis in animal studies. Nickel metal and its oxides are animal carcinogens when administered intratracheally, intrapleurally, or intramuscularly. Certain nickel compounds have caused cancer of lungs, larynx, and paranasal sinuses by inhalation, intramuscular, intraperitoneal routes of administration in lab animals. Nickel compounds are carcinogenic to humans by inhalation as defined by the National Toxicology Program (NTP) and the International Agency for Research on Cancer (IARC) (Group 1). Nickel metal is possibly carcinogenic to humans as defined by IARC (Group 2B).

Aluminum

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**Material Safety Data Sheet**

Ohio Valley Aluminum Company, Inc.  
1100 Industrial Park, Shelbyville, Kentucky 40065

Phone: (502) 633-2783

Rev. Date 4/12/94  
Orig. Date 12/1/87  
Rev. No. 2

Section I - Material Description

Common Name: Aluminum Alloy Billet and Sawchips

Chemical Name: Aluminum Alloy

CAS No.: See Section II

Manufacturer: Ohio Valley Aluminum Co., Inc.

Section II - Hazardous Ingredients and Occupational Exposure Limits

	<u>Percent Range</u>	<u>CAS No.</u>
Aluminum	90 - 100	7429-90-5
Chromium	< 0.1	7440-47-3
Copper	< 0.5	7439-50-8
Iron	< 0.7	7439-89-6
Magnesium	< 1.2	7439-95-5
Manganese	< 0.2	7439-96-5
Silicon	< 1	7440-21-3
Titanium	< 0.1	7440-32-6
Nickel	< 0.03	7440-02-0
Zinc	< 0.2	7440-66-6

Variations in aluminum standards and specifications account for the percentage range of the ingredients listed above.

Occupational Exposure LimitsTWA in mg/m<sup>3</sup>

<u>Chemical</u>	<u>TLV</u>	<u>TLV-STEL</u>	<u>OSHA PEL</u>	
Aluminum, total dust	10	—	15 (total)	5 (respirable)
Aluminum, fume	5	—	—	—
Aluminum Oxide, dust	10 (total)	—	—	—
Chromium, metal	0.5	—	1.0	—
Copper, fume	0.2	—	0.1	—
Copper, dust & mist, as Cu	1.0	—	1.0	—
Iron Oxide, fume (Fe <sub>2</sub> O <sub>3</sub> ), as Fe	5.0	—	10.0 (total particulate)	—
Magnesium Oxide, fume	10.0	—	15.0 (total particulate)	—
Manganese, fume as Mn	1.0	3.0	5.0 (Ceiling)	—
Nickel, elemental, insoluble & soluble compounds, as Ni	1.0	—	1.0	—
Silicon	10.0	—	15 (total)	5 (respirable)
Titanium Dioxide	10.0	—	15 (total)	—
Zinc Oxide, fume	5.0	10.0	5.0	—
Zinc Oxide, dust	10.0	—	15 (total)	5 (respirable)



Bldg. 242 America Place • Jeffersonville, IN 47130  
812.282.8256 . 812.280.6070/Fax . 800.264.8256 . [www.AltecExtrusions.com](http://www.AltecExtrusions.com)

### LEED CERTIFICATION DATA REQUIREMENT FORM

The following information is required of all product manufacturers and contractors:

10% \_\_\_\_\_ Percentage of post-consumer recycled content

65% \_\_\_\_\_ Percentage of post-industrial recycled content

Cincinnati, OH 45241 \_\_\_\_\_ Location (City,State) for the manufacturing/final assembly  
of the product

Jeffersonville, IN 41130 \_\_\_\_\_ Location of where material was manufactured

NO (circle one)

Is this within 500 miles of the project site? YES or

\_\_\_\_\_ If manufactured or assembled  
within 500 miles, identify the  
location (city, state) for the  
extraction, harvesting or  
recovery of the primary  
components of the product.