

### Section 1 Identification

**Product name:** Aluminum Puffs  
**Recommended use:** Filler  
**Details of the supplier of the safety data sheet:**  
 Freeman Manufacturing and Supply Company  
 1101 Moore Road, Avon, OH 44011  
 Phone (440) 934-1902  
 FAX (440) 934-7200

HMIS	
<b>H</b>	1
<b>F</b>	0
<b>R</b>	1
<b>PPE</b>	
Sec. 8	

**24 Hour Emergency Phone Number: (800) 424-9300**

### Section 2 Hazards Identification

**GHS Classification by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)**  
 Not classified

**Label Elements**  
 None

**Hazards not otherwise classified**

This product is present in a massive form as an alloy. It does not present the same hazard when the individual components are in their powdered forms. The materials present in this product in their powdered forms present aquatic toxicity to the environment, pyrophoricity, flammability, self-heating capabilities, carcinogenicity, water reactivity, and acute toxicity. When processed or where dust is generated a combustible dust hazard may be present. Avoid generating dust, generating sparks, ignition sources, and take all precautions. Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath. Under normal use and handling of the solid form of this material there are few health hazards. Cutting, welding, melting, grinding etc. of these materials will produce dust, fume or particulate containing the component elements of these materials. Exposure to the dust, fume or particulate of these materials may present significant health hazards. Exposure to dust or fume may cause irritation of the eyes, skin and respiratory tract. Fine particulates dispersed in air may present an explosion hazard.

### Section 3 Composition/Information on Ingredients

Component	CAS Number	Weight %
Aluminum	7429-90-5	>75
Silicon	7440-21-3	<17
Zinc	7440-66-6	<11
Iron	7439-89-6	<11
Copper	7440-50-8	<10
Magnesium	7439-95-4	<8
Nickel	7440-02-0	<3
Manganese	7439-96-5	<3
Silver	7440-22-4	<1
Chromium	7440-47-3	<0.5
Cobalt	7440-48-4	<0.25
Cadmium	7439-43-9	<0.03

**Section 4 First Aid Measures**

**Description of first aid measures**

**Eye Contact:** Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

**Skin Contact:** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

**Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.

**Ingestion:** Do not induce vomiting. Keep respiratory tract clear. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed**

**Health effects from mechanical processing (e.g., cutting, grinding):** Dust and fumes from processing can cause skin abnormalities (pigmentation changes), rashes, and reduction in the number of red blood cells (anemia). Acute overexposures can cause reduced ability of the blood to carry oxygen (methemoglobin), and the accumulation of fluid in the lungs (pulmonary edema).

**Additional health effects from elevated temperature processing (e.g., welding, melting):** Chronic overexposures can cause respiratory sensitization, asthma, scarring of the lungs (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease, reproductive harm in males, and lung cancer.

**Notes to Physician**

Treat symptomatically

**Section 5 Fire-Fighting Measures**

**Suitable extinguishing media**

Use Class D extinguishing agents, dry sand

**Unsuitable extinguishing media**

Water, halons, ABC powder, carbon dioxide, foam

**Special hazards arising from chemical**

This product does not present fire or explosion hazards as shipped.

May be a potential hazard under the following conditions:

- Dust clouds may be explosive.
- Chips, fines and dust in contact with water can generate flammable/explosive hydrogen gas.
- Dust and fines in contact with water can generate flammable/explosive hydrogen gas.
- Dust and fines in contact with certain metal oxides (e.g., rust, copper oxide).
- Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide).

**Hazardous combustion products**

Oxides of aluminum. Oxides of tin. Oxides of nickel. Oxides of copper. Oxides of silicone and carbon. Oxides of lead. Oxides of silver.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**Section 6 Accidental Release Measures**

**Personal Precautions**

Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Molten, heated and cold aluminum look alike; do not touch unless you know it is cold. Avoid contact with sharp edges or heated metal.

## Aluminum Puffs

### Section 6 Accidental Release Measures continued

#### Environmental Precautions

Reuse or recycle material whenever possible.

#### Methods for Containment and Clean Up

Clean up spills immediately and dispose of waste safely. For particulates and dust: Avoid actions that cause dust to become airborne such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up.

### Section 7 Handling and Storage

#### Precautions for safe handling

Use personal protection recommended in Section 8. Hot aluminum does not necessarily glow red. Beryllium may concentrate in the dross formed when aluminum scrap is remelted. Therefore, the potential for exposures to beryllium when handling dross must be considered. Control of airborne dust levels would be critical in reducing or eliminating this potential.

#### Conditions for safe storage, including incompatible materials

Store and handle in accordance with all current regulations and standards. Store in a well-ventilated place. Store in a cool, dry place. Incompatible Materials: Strong acids, strong bases, strong oxidizers. Alkalis. Metal oxides. Water, humidity. Corrosive substances in contact with metals may produce flammable hydrogen gas.

### Section 8 Exposure Controls/Personal Protection

#### Exposure Guidelines

Component	Type	Value	Form
Aluminum	OSHA TWA	5 mg/m <sup>3</sup>	Respirable fraction
		15 mg/m <sup>3</sup>	Total dust
Chromium	OSHA TWA	1 mg/m <sup>3</sup>	
Copper	ACGIH TWA	1 mg/m <sup>3</sup>	Dust and mist
		0.2 mg/m <sup>3</sup>	Fume
Manganese	ACGIH TWA	0.2 mg/m <sup>3</sup>	Inhalable fraction
		0.02 mg/m <sup>3</sup>	Respirable fraction
Nickel	OSHA TWA	1 mg/m <sup>3</sup>	
Silicon	OSHA TWA	5 mg/m <sup>3</sup>	Respirable fraction
		15 mg/m <sup>3</sup>	Total dust

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Personal Protective Equipment

**Eye protection:** Wear appropriate protective eyeglasses or chemical safety goggles.

**Skin and body protection:** Wear appropriate protective gloves and clothing to prevent skin exposure. Personal protective equipment should be based upon a hazard assessment.

#### Respiratory Protection

Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

#### Hygiene Measures

Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

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**Section 9 Physical and Chemical Properties**

<b>Appearance</b>	Silver-colored/gray solid
<b>Odor</b>	No information available
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point</b>	476.7-660 °C (890.1-1220 °F)
<b>Boiling Point</b>	2450 °C (4442 °F)
<b>Flash Point</b>	No information available
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper / lower explosive limits</b>	No information available
<b>Vapor Pressure</b>	Negligible
<b>Vapor Density</b>	No information available
<b>Specific Gravity</b>	2.5-3.13
<b>Solubility</b>	Insoluble in water
<b>Partition coefficient; n-octanol/water</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Decomposition Temperature</b>	No information available

**Section 10 Stability and Reactivity**

**Reactivity**

The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical Stability**

Stable at normal temperatures and pressure.

**Possibility of Hazardous Reactions**

Hazardous polymerization will not occur.

**Conditions to Avoid**

Avoid creating or spreading dust. Sparks, heat, open flame and other sources of ignition. Dust, chips, or ribbons can be ignited more easily, by an ignition source, by improper machining, or by spontaneous combustion if finely divided and damp.

**Incompatible Materials**

When molten: water. Strong acids, strong bases, strong oxidizers. Alkalis. Metal oxides. Moisture. Corrosive substances in contact with metals may produce flammable hydrogen gas.

**Hazardous Decomposition Products**

With acids, aluminum metals, or ammonium salts may react to form toxic vapors. May form solid compounds releasing heat. Metal oxides.

**Section 11 Toxicological Information**

**Likely Routes of Exposure**

<b>Eye Contact</b>	May cause irritation.
<b>Inhalation</b>	May cause respiratory tract irritation.
<b>Skin Contact</b>	May cause irritation on repeated contact.
<b>Ingestion</b>	Not expected

**Information on toxicological effects**

<b>Acute oral toxicity</b>	No data available
<b>Acute inhalation toxicity</b>	No data available
<b>Acute dermal toxicity</b>	No data available

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**Section 11 Toxicological Information** continued

<b>Skin corrosion/irritation</b>	May cause skin irritation
<b>Serious eye damage/eye irritation</b>	May cause eye irritation
<b>Respiratory or skin sensitization</b>	No data available
<b>Germ cell mutagenicity</b>	No data available
<b>Carcinogenicity</b>	
<b>IARC</b>	Nickel and Cobalt are classified as 2B: Possibly carcinogenic to humans
<b>NTP</b>	Nickel: 2-Evidence of Carcinogenicity
<b>OSHA</b>	Nickel: listed
<b>Reproductive Effects</b>	Can cause reduced fertility and fetal toxicity
<b>Specific Target Organ Toxicity - Single exposure</b>	No data available
<b>Specific Target Organ Toxicity - Repeated exposure</b>	No data available
<b>Aspiration hazard</b>	Not an aspiration hazard

**Section 12 Ecological Information**

<b>Ecotoxicity</b>	No data available
<b>Persistence and Degradability</b>	Not biodegradable
<b>Bioaccumulation/ Accumulation</b>	Not bioaccumulating
<b>Mobility</b>	Not considered mobile

**Section 13 Disposal Considerations**

Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local, regional, national, and international regulations.

**Section 14 Transport Information**


<b>DOT</b>	Not regulated
<b>TDG</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG/IMO</b>	Not regulated

**Section 15 Regulatory Information**

**U.S. Federal Regulations**

**SARA 302 Extremely hazardous substance:** Not listed  
**SARA 311/312 Hazardous Classes:** Fire Hazard, Reactive Hazard  
**SARA 313 (TRI reporting):** Listed

**US State Regulations**

**California Proposition 65:**  **WARNING:** This product can expose you to chemicals including nickel and cadmium, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**Inventories**

**TSCA (USA):** On the inventory list, or in compliance with the inventory  
**DSL (Canada):** On the inventory list, or in compliance with the inventory

**Section 16 Other Information**

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