

Material Safety Data Sheet

Freeman-Palmer Aluminum Pattern Plates

MSDS No. 14

Date of Preparation: 06/15/01

Revision:

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Freeman-Palmer Aluminum Pattern Plates

Chemical Formula: N/A

CAS Number: N/A

Other Designations: N/A

General Use: N/A

Manufacturer: Palmer Engineered Products Inc., 1248 Perry Street, Springfield, OH 45404, emergency phone no. 1-800-531-1833.

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PPE†

†Sec. 8

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt or % vol
Aluminum	7429-90-5	Balance
Chromium/ Chromium (hexavalent)	7440-47-3	0.06-0.06
Copper	7440-50-8	0.10-1.0
Iron	7439-89-6	0.10-1.4
Manganese	7439-96-5	0.05-0.06
Magnesium	7439-95-4	0.3-2.4
Nickel	7440-02-0	<0.15
Silicon	7440-21-3	0.2-0.3
Titanium	7440-32-6	0.11-0.25
Zinc	7440-66-6	2.7-8.0

TSCA Inventory Status: Chemical components listed on TSCA Inventory.

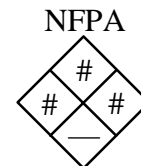
Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Aluminum	None Established	None Established	10 mg/m ³	None established	None Estab.	None Estab.	None Estab.
Chromium Chromium (hexavalent)	1 mg/m ³	None Established	0.5mg/m ³ 0.05mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Copper (as fume)	0.1mg/m ³	None Estab.	0.2mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Copper (as dust)	1.0mg/m ³		1.0mg/m ³				
Iron (as fume)	10.0mg/m ³	None Estab.	5.0mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Manganese (Dust) (Fume)	5mg/m ³ *	None Estab.	5mg/m ³ * 1mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Magnesium	15.0mg/m ³	None Estab.	10.0mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Nickel	1.0mg/m ³	None Estab.	1.0mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Silicon	15.0mg/m ³	None Estab.	10.0mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Titanium (as titanium oxide)	15.0mg/m ³	None Estab.	10.0mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
Zinc	5.0mg/m ³	None Estab.	5.0mg/m ³	None Estab.	None Estab.	None Estab.	None Estab.
* Ceiling Limits	(as oxide fume)						

Section 3 - Physical and Chemical Properties

Physical State: N/A	Water Solubility: not soluble
Appearance and Odor: Silver-white, no odor, solid	Other Solubilities: N/A
Odor Threshold: N/A	Boiling Point: 4220 F (for alum.)
Vapor Pressure: N/A	Freezing/Melting Point: N/A
Vapor Density (Air=1): N/A	Viscosity: N/A
Formula Weight: N/A	Refractive Index: N/A
Density: N/A	Surface Tension: N/A
Specific Gravity (H₂O=1, at 4 °C): (for alum.) 2.709	% Volatile: N/A
pH: N/A	Evaporation Rate: N/A

Section 4 - Fire-Fighting Measures

Flash Point: Explosive Limits for aluminum dust
Flash Point Method: N/A
Burning Rate: N/A
Autoignition Temperature: N/A
LEL: 45,000mg/m³
UEL: N/A
Flammability Classification: N/A
Extinguishing Media: In case of a metal powder/dust fire, use a class "D" fire extinguisher agents (Lith-X, dry graphite, etc.) and isolate the fire. Do not use water.
Unusual Fire or Explosion Hazards: Like all combustible solid, dusts, from this product can form explosive mixtures in air. Explosive dust concentrations are usually very thick dust clouds, not often found in working areas but can occur in process vessels, dust collectors or bulk loading operations.
Hazardous Combustion Products: N/A
Fire-Fighting Instructions: Casting in solid form will not burn or explode. Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.



Section 5 - Stability and Reactivity

Stability: Stable
Polymerization: Hazardous polymerization cannot occur.
Chemical Incompatibilities: Fine castings dust and halogens or finely divided bromates, chlorates, or iodates form an explosive mixture. The casting may react with caustics or acids to produce hydrogen gas, which is explosive. Also incompatible with oxidizers.
Conditions to Avoid: N/A
Hazardous Decomposition Products: N/A

Section 6 - Health Hazard Information

Potential Health Effects

Primary Entry Routes: Inhalation
Target Organs: N/A
Acute Effects
Inhalation: Breathing excessive amounts of silica dust for a long time can cause silicosis. Silicosis causes shortness of breath, reduced capacity to do work, and weakens the defenses against other lung diseases.
Eye: Metal particles in the eyes may cause irritation if not removed.
Skin: N/A
Ingestion: N/A
Noise: Grinding castings is noisy. The OSHA limit for noise averaged over 8 hours is 90 decibels (dBA). Hearing conservation program required if exposure is over 85 dBA. If noise is at or above 90 dBA you should wear ear muffs or ear plugs.
Carcinogenicity: IARC, NTP, and OSHA do not list Freeman-Palmer Aluminum Pattern Plates as a carcinogen.
Medical Conditions Aggravated by Long-Term Exposure: N/A
Chronic Effects: N/A

Emergency and First Aid Procedures

Inhalation: (fumes from welding) Move to fresh air

Eye Contact: trained individuals, such as a nurse or physician, should remove metal particles.

Skin Contact: Use a mild hand cream if irritation develops.

Ingestion: N/A

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: N/A

Special Precautions/Procedures: N/A

Section 7 - Spill, Leak, and Disposal Procedures

Spill /Leak Procedures: If damaged, return casting to vendor or send to scrap reclaimer

Small Spills: N/A

Large Spills: N/A

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

Cleanup: N/A

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Disposal: Collected dust from machining, welding, etc. may be classed as a "hazardous waste" depending on circumstances. Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Disposal Regulatory Requirements: N/A

Container Cleaning and Disposal: N/A

Ecological Information: N/A

EPA Regulations:

RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR Not classified)

CERCLA Hazardous Substance (40 CFR 302.4) listed/unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ),)

SARA 311/312 Codes:

SARA Toxic Chemical (40 CFR 372.65): This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of SARA TITLE III and 40 CFR 372:

COPPER (As Cu)	CAS# 7440-50-8	0.03 – 5.0%
NICKEL	CAS# 7440-02-0	0.05 – 3.0%

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ)

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

OSHA Specifically Regulated Substance (29CFR 1910.)

State Regulations: N/A

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: N/A

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: N/A

Respiratory Protection: Wear a NIOSH approved respirator for dusts or fume if concentrations exceed the TLV or PEL. Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.
Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.
Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Special Precautions and Comments

Handling Precautions: No special precautions.

Storage Requirements

DOT Transportation Data (49 CFR 172.101):

Shipping Name:	Packaging Authorizations	Quantity Limitations
Shipping Symbols:	a) Exceptions	a) Passenger, Aircraft, or Railcar:
Hazard Class:	b) Non-bulk Packaging:	
ID No.:	c) Bulk Packaging:	Vessel Stowage Requirements
Packing Group:		a) Vessel Stowage
Label:		b) Other:
Special Provisions (172.102):		

Additional Information:

Elements having a listed percentage greater than zero will be present in all grades. Those having a value of "0" may not be present in certain grades.

Nickel has been shown to cause cancer in laboratory animals. However its potential to cause cancer in humans has not been determined.

Water insoluble hexavalent chromium is classified as a human carcinogen by the American Conference of Governmental Industrial Hygienists. Approximately 66% of the total chromium (in welding fume) is hexavalent, and only 5% of that is insoluble. Considering the very small amount of chromium in the casting, overexposure to hexavalent chromium is not likely. There is no hexavalent chromium in the alloy or its dust.

Overview:

Machining, grinding, flame cutting, or welding on the casting will put contaminants, primarily aluminum and zinc, in the air. Other toxic metals in the alloy are present in small amounts that will not represent a hazard if zinc and aluminum dust and fume are adequately controlled.

Dust or powder from aluminum castings can be a fire or explosion hazard. Explosive dust concentrations are usually very thick dust clouds, not often found in working areas but which could occur in process vessels, dust collectors, or bulk loading operations. The solid casting is not flammable.

The dust or chips from this casting can react violently with halogens (such as chlorine or bromine), halogenated hydrocarbons, and oxidants. The aluminum in the casting may react with acids or caustics, producing explosive hydrogen gas.

Fumes and dusts from casting may irritate the nose and throat.

High production machining, grinding, welding operations, etc. should be done under local exhaust ventilation. If ventilation is not adequate, wear a NIOSH approved dust and fume respirator.

Grinding on castings that have not been cleaned may generate significant amounts of dust containing free silica, which can cause silicosis.

Prepared By:

Revision Notes:

Disclaimer: We believe the information contained in this MSDS is correct as of this date, however, because the material may be used under conditions over which we have no control we give no warranty and assume no responsibility for any damage to person, property or business arising from such use. It is the responsibility of the user to ensure it is properly used.