

MSDS No.: SC-000-052
 Date: 11/20/85
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376

MATERIAL SAFETY DATA SHEET

SECTION I GENERAL INFORMATION

A. **Material Name:** Aluminum castings - Series 300 (without beryllium)
Other Names: N/A **Chemical Family:** Aluminum alloy

B. **Manufacturer:** NIBCO INC. Telephone: 219-295-3000
 500 Simpson Ave. For chemical emergency - spill, leak,
 P.O. Box 1167 fire exposure or accident, call:
 Elkhart, IN 46516 CHEMTEL 1-800-255-3924 day or night

SECTION II HAZARDOUS INGREDIENTS

Ingredient	CAS #	Weight %	ACGIH TLV	OSHA PEL
Aluminum	7429-90-5	Balance	5 mg/m ³ fume 10 mg/m ³ dust	5 mg/m ³ dust (respirable) 15 mg/m ³ dust (total)
Chromium	7440-47-3	0.1-0.4	0.5 mg/m ³	1 mg/m ³
Copper	7440-50-8	0.03-5	0.2 mg/m ³ fume 1 mg/m ³ dust	0.1 mg/m ³ fume 1 mg/m ³ dust
Iron	7439-89-6	0-0.4	5 mg/m ³ iron oxide fume (as Fe)	10 mg/m ³ iron oxide fume (as Fe)
Magnesium	7439-95-4	0.05-1.5	10 mg/m ³ oxide	10 mg/m ³ oxide
Manganese	7439-96-5	0.16-1.5	1 mg/m ³ fume; STEL 3 mg/m ³ 5 mg/m ³ dust	1 mg/m ³ fume C 5 mg/m ³ dust
Nickel	7440-02-0	0.05-3	0.05 mg/m ³ dust and fume	1 mg/m ³
Silicon	7440-21-3	4.5-20	10 mg/m ³	5 mg/m ³ dust (respirable) 15 mg/m ³ dust (total)
Tin	7440-31-5	0.1-0.5	2 mg/m ³	2 mg/m ³
Titanium	7440-32-6	0.04-0.25	10 mg/m ³ as titanium oxide	15 mg/m ³
Zinc	7440-66-6	0.03-4.5	5 mg/m ³ fume (as ZnO) 10 mg/m ³ dust (total, as ZnO)	5 mg/m ³ fume (as ZnO) 5 mg/m ³ dust (respirable, as ZnO) 15 mg/m ³ dust (total, as ZnO)

KNOWN HAZARDS UNDER 29 CFR 1910.1200

	Yes	No		Yes	No		Yes	No		Yes	No
Combustible Liquid		x	Skin Hazard		x	Oxidizer		x	Reproductive Toxin		x
Flammable Material		x	Eye Hazard		x	Organic Peroxide		x	Blood Toxin		x
Pyrophoric Material		x	Toxic Agent		x	Corrosive Material		x	Nervous Sys. Toxin		x
Explosive Material		x	Highly Toxic Agent		x	Compressed Gas		x	Lung Toxin		x
Unstable Material		x	Sensitizer		x	Irritant		x	Liver Toxin		x
Water Reactive Mat.		x	Carcinogen		x				Kidney Toxin		x

Comments: The following ingredients must be reported under Section 313 of SARA - aluminum, chromium, copper, manganese, nickel, zinc.

SECTION II HAZARDOUS INGREDIENTS (CONTINUED)	
SHIPPING INFORMATION	SPECIAL HAZARD DESIGNATIONS
DOT HAZARD CLASS: <u>N/A</u>	HEALTH: <u>0</u>
DOT SHIPPING NAME: <u>N/A</u>	FLAMMABILITY: <u>0</u>
	REACTIVITY: <u>0</u>
	PROTECTIVE EQUIPMENT: <u>-</u>
SHIPPING I.D. NUMBER: <u>N/A</u>	HAZARD RATING
	0 - MINIMAL
	1 - SLIGHT
	2 - MODERATE
	3 - SERIOUS
	4 - SEVERE

SECTION III PHYSICAL DATA	
Melting Point: <u>4220 °F</u>	Vapor Pressure (mm Hg): <u>N/A</u>
Boiling Point: <u>N/A</u>	Vapor Density (AIR=1): <u>N/A</u>
Specific Gravity (H ₂ O=1): <u>2.708</u>	Solubility in Water: <u>Not soluble</u>
Appearance and Odor: <u>Silver colored solid bars with no odor</u>	

SECTION IV FIRE AND EXPLOSION HAZARD DATA	
Flash Point (method used): <u>N/A</u>	
LEL: <u>N/A</u>	UEL: <u>N/A</u>
Extinguishing Media: <u>In case of a metal powder/ dust fire, use a class "D" fire extinguishing agent and isolate the fire.</u>	
Special Fire fighting Procedures: <u>Do not use water.</u>	
Unusual Fire and Explosion Hazards: <u>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.</u>	

SECTION V REACTIVITY DATA	
A. Stability	<input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable
Conditions to Avoid: <u>N/A</u>	
B. Hazardous Polymerization:	<input type="checkbox"/> May Occur <input checked="" type="checkbox"/> Will Not Occur
Conditions to Avoid: <u>N/A</u>	
C. Incompatible Materials:	<u>Fine castings, dusts, and halogens or finely divided bromates, chlorates, or iodates form an explosive mixture. The castings may react with caustics or acids to produce hydrogen gas. Also incompatible with oxidizers.</u>
D. Hazardous Decomposition Products:	<u>None.</u>

SECTION VI

HEALTH HAZARD DATA

Route(s) of Entry: Inhalation Ingestion Skin

Health Hazards (Acute and Chronic):

Fittings as received do not present an inhalation, ingestion, skin contact or eye contact hazard. Listed hazards may result from remelting, soldering or brazing.

A. Metals:

Aluminum: Aluminum and its components can cause respiratory damage, such as pulmonary fibrosis. Greatest hazard is that it is a reactive metal in many industrial chemical applications.

Chromium: Metallic chromium can cause dermatitis. It is not associated with lung toxicity or cancer in its divalent or trivalent forms.

Copper: Exposure to fumes or dusts may produce "metal fume fever" with flu-like symptoms including: fever, chills, aches, dry throat and nausea. Other symptoms of overexposure may include metallic taste, discoloration of the skin or hair and irritation of eyes, nose or throat.

Iron: Exposure to iron oxide fumes or dusts has not been linked to illness but prolonged exposure may produce siderosis, or "iron pigmentation" of the lungs, which may appear on X-rays.

Manganese: A skin and eye irritant. Human systemic effects by inhalation: degenerative brain changes, change in motor activity, muscle weakness. Questionable carcinogen with experimental tumorigenic data. Mutation data reported.

Nickel: Elemental nickel has been identified as a possible carcinogen. The fume is a respiratory irritant and may cause respiratory diseases. Skin contact may cause an allergic reaction.

Silicon: Silicon does not occur freely in nature, but is found as silicon dioxide which causes respiratory effects.

Tin: Tin may cause irritation of the eyes, nose, throat and skin.

Titanium: Titanium is classified as a nuisance dust, and will cause irritation of the eyes and nose at high concentrations. Questionable carcinogen. Experimental tumorigenic data have been reported.

Zinc: Exposure to zinc oxide fumes or dusts may produce "metal fume fever" with flu-like symptoms including: fever, chills, aches, dry throat and nausea. Other symptoms of overexposure may include metallic taste, discoloration of the skin or hair and irritation of eyes, nose or throat.

B. Other Constituents:

Not applicable

C. Carcinogenicity: NTP IARC OSHA

According to the NTP, elemental nickel is a substance that may reasonably be anticipated to be a carcinogen. Elemental nickel is classified by IARC in group 2B as possibly carcinogenic to humans

D. Emergency First Aid:

Exposure effects occur primarily by inhalation of dusts or fumes. Remove person to fresh air. Consult physician. If on skin, use a mild hand cream if irritation develops

SECTION VII SPILL OR LEAK PROCEDURES

- A. **Special Handling or Storage:**
Keep dry if metal is to be remelted.
- B. **Spill or Leak Containment:**
Recover solid material, no environmental hazard anticipated. If material is to be remelted, care should be taken to handle molten metal carefully during pouring to avoid severe metal burns that could occur.
- C. **Waste Disposal:**
Recycle where possible, consult state and federal regulations for landfill disposal.
- D. **Other Precautions:**
None.

SECTION VIII SPECIAL PROTECTION INFORMATION

- A. **Respiratory Protection (specify type):** NIOSH approved for toxic dust/ fume
- B. **Ventilation:** Local Exhaust Mechanical (General)
Other (specify): N/A
- C. **Eye Protection:** Yes No Type: goggles or faceshield if remelted
- D. **Protective Gloves:** Yes No Type: non-porous
- E. **Other Protective Equipment or Clothing:** Yes No
Type: Appropriate high-temperature protective clothing may be needed if the material is remelted.
- F. **Special Precautions or Work Practices:**
Special precautions may be needed to protect against metal fume if material is remelted.

DISCLAIMER OF LIABILITY

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

PRODUCT NAME: Aluminum Castings

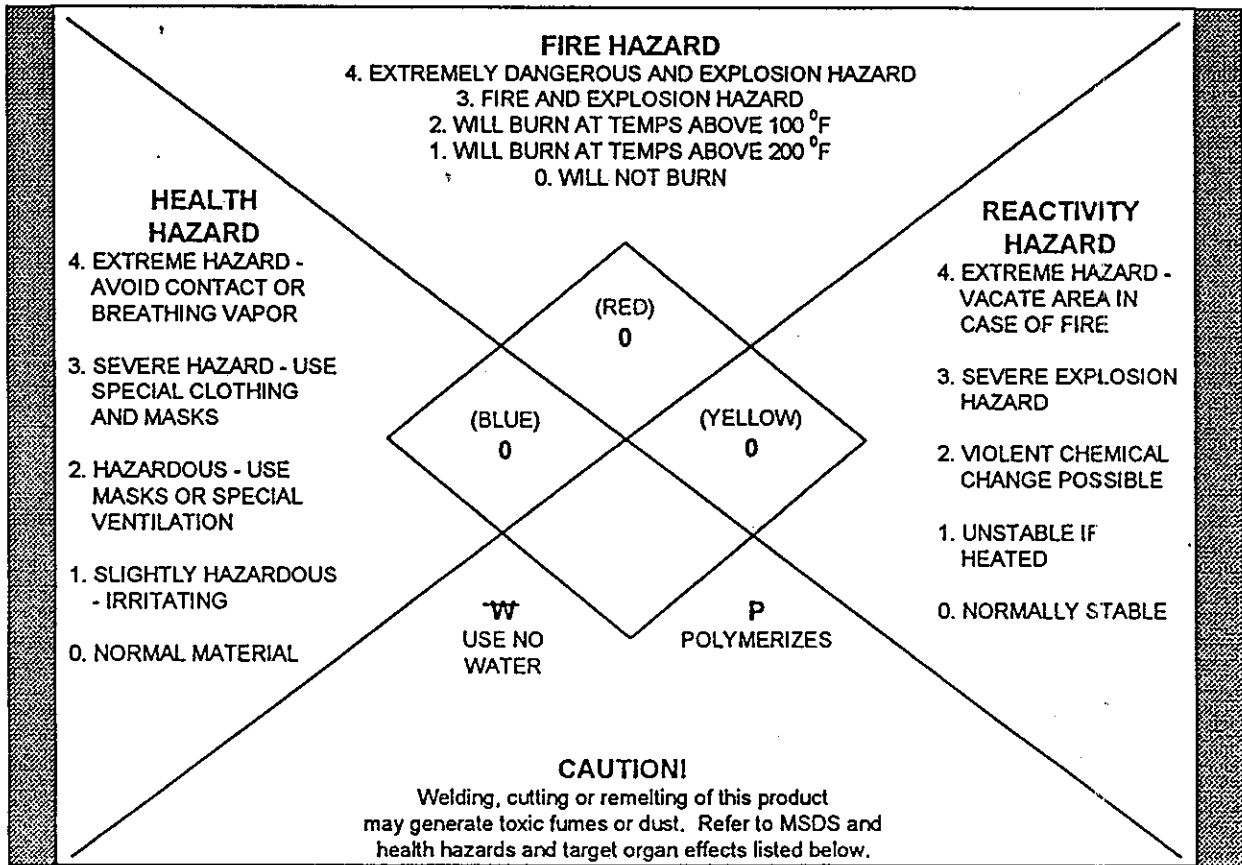
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Refer to Material Safety Data Sheet for more information



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ELKHART, IN 46516
219-295-3000



NFPA RATING AS SHIPPED

INGREDIENTS Aluminum, copper, chromium, iron, manganese, magnesium, nickel, silicon, tin, titanium, zinc	STORAGE AND HANDLING Material should be kept dry if it is to be remelted to prevent steam explosion
SARA SECT. 313 NOTIFICATION Aluminum, chromium, copper, manganese, nickel, zinc	

<input type="checkbox"/> TOXIC <input type="checkbox"/> HIGHLY TOXIC <input type="checkbox"/> REPRODUCTIVE TOXIC	HEALTH HAZARDS <input type="checkbox"/> IRRITANT <input type="checkbox"/> CORROSIVE <input type="checkbox"/> SENSITIZER	<input type="checkbox"/> CARCINOGEN <input type="checkbox"/> _____ <input checked="" type="checkbox"/> NO KNOWN EFFECTS
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<input type="checkbox"/> HEPATOXINS (LIVER DAMAGE) - jaundice, liver enlargement	<input type="checkbox"/> HEMATOPOIETICS (BLOOD DAMAGE) - cyanosis, unconsciousness	<input type="checkbox"/> CUTANEOUS HAZARDS - skin damage, rashes, irritation, defatting of skin
<input type="checkbox"/> NEPHROTOXINS (KIDNEY DAMAGE) - edema, proteinuria	<input type="checkbox"/> PULMONARY DYSFUNCTIONS (Lung Damage) - shortness of breath, chest tightness, cough	<input type="checkbox"/> EYE HAZARDS - impaired vision, conjunctivitis, corneal damage
<input type="checkbox"/> NEUROTOXINS (NERVOUS SYSTEM DAMAGE) - narcosis, behavioral changes, decrease in motor functions	<input type="checkbox"/> REPRODUCTIVE TOXINS - birth defects, sterility	<input checked="" type="checkbox"/> NONE - no known immediate or delayed effects