Earle M. Jorgensen Company

Material Safety Data Sheet

Company	Issue Date	Supplier Code
EMJ 3050 E. Birch Brea, California 92621	November 1, 1995	AL
Trade Name (Common Name or Synonym) Aluminum Alloys	**Emergency Phone Number** (714) 579-8823	or contact your nearest EMJ office
Chemical Name Aluminum	**Form** Bar, Sheet, Plate, Tubing, Structurals, and Forgings	

I. INGREDIENTS

Material or Component	CAS Number	% Weight	Exposure Limits	
			1984-85 ACGIH TLV (mg/m³)	OSHA 1910.1000 PEL (mg/m³)
Base Metal				
Aluminum (Al)	7429-90-5	90-99.7	10.0 as metal dust and oxide 5.0 as welding fume	Not established Not established
Alloying Elements				
Cobalt (Co)	7440-48-4	< 1.0 - 10.00	0.1	0.1
Copper (Cu)	7440-50-8	< 1.0 - 10.00	0.2 as fume	0.1 as fume
Iron (Fe)	**1309-37-1**	**< 1.0 - 10.00**	5.0 as fume	10.0 as fume
Lead (Pb)	**7439-92-1**	**< 0.2 - 0.7**	0.15 as dust and fume	0.05 as dust and fume
Magnesium (Mg)	**1309-48-4**	**< 1.0 - 10.00**	10.0 as fume	15.0 as fume
Manganese (Mn)	**7439-96-5**	**< 1.0 - 10.00**	1.0 as fume	5.0 ceiling
Silicon (Si)	**7440-21-3**	**< 1.0 - 10.00**	10.0 as total dust	Not established
Tin (Sn)	**7440-31-5**	**< 1.0 - 10.00**	2.0 as oxide and metal	2.0 as inorganic compounds
Zinc (Zn)	**1314-13-2**	**< 1.0 - 10.00**	5.0 as fume	5.0 as fume

Note: Aluminum alloys will be comprised of various combinations of the elements shown here. In addition, other alloying elements may be present in minute quantities.

II. PHYSICAL DATA

Material is (At Normal Conditions)				Appearance and Odor	
Liquid	X Solid	Gas	Other	Metallic Appearance	No odor
Acidity/Alkalinity		**Approx**			**Vapor Pressure (mm Hg at 20°C)**
		Melting Point 900-1200°F		Specific Gravity (H_2O = 1) 2.5 - 2.9	
pH = NA		Boiling Point NA °F		Solubility in water (% by weight) Nil	NA

III. PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection	Hands, Arms, and Body
Appropriate respirator depending upon potential airborne contaminants and their concentrations. If exposure limits are reached or exceeded use NIOSH approved respiration equipment.	Appropriate gloves, especially for sheet and coil.
Eyes and Face	**Other Clothing and Equipment**
Safety glasses or shield as appropriate.	As needed depending on operation and safety codes.

IV. EMERGENCY MEDICAL PROCEDURES

Skin Contact: Remove particles thoroughly by washing with soap and water.

Eye Contact: Flush with water thoroughly. Get medical attention if irritation persists.

V. HEALTH/SAFETY INFORMATION

HEALTH

For standard operations (e.g., melting, cutting, grinding), aluminum alloys present a low health risk by inhalation and are usually considered a nuisance dust. Toxicity by ingestion - none expected. Skin and eyes - not an irritant. Welding and plasma cutting of alloys high in copper (2000 and 7000 series) may present the potential for overexposure to copper fume which can result in upper respiratory tract irritation, nausea, and metal fume fever. Nickel and chromium are other alloying elements considered hazardous as fume; however, they do not present a carcinogenic or other health concerns due to their low concentrations of the chemical form in which they are present. Overexposure to lead fumes over an extended period of time can result in such toxic effects as central nervous system disturbances, renal changes, peripheral neuropathy, gastrointestinal disturbances, anemia, and chromosomal changes.

Medical conditions generally aggravated by exposure would be dermatitis and pulmonary disease or disorders.

Occupational Exposure Limits
See Ingredients Section I.

Chromium and nickel have been identified by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) as potential carcinogens.

FIRE AND EXPLOSION

Flash Point	Auto-Ignition Temperature	Flammable Limits in Air	Extinguishing Media
NA °F	NA °F	Lower NA % Upper NA %	Dry powder or sand

Fire and Explosion Hazards
Small chips, fine turnings and dust may ignite readily. Damp aluminum dust may spontaneously heat with liberation of hydrogen to form explosive air mixtures. Molten aluminum may explode on contact with water or certain metal oxides (e.g., oxides of copper, iron, and lead).

Extinguishing Media Not to be Used
Do not use water or halogen on dust fires.

REACTIVITY

Stability
☒ Stable ☐ Unstable

Incompatibility (Materials to Avoid)
Reacts with strong acids to form hydrogen gas.

Conditions to Avoid
Aluminum products under normal conditions are stable during use, storage, and transportation. Halogen acids and sodium hydroxide in contact with aluminum may generate explosive mixtures of hydrogen. Finely divided aluminum, such as small chips and fines, will form explosive mixtures in air. It will also form explosive mixtures in air in the presence of bromates, iodates, or ammonium nitrate. Strong oxidizers cause violent reactions with considerable heat generation.

Hazardous Decomposition Products
See Additional Information Section VII.

VI. ENVIRONMENTAL

Spill or leak procedures
NA

Waste Disposal Method
Used or unused product should be tested to determine hazard status and disposal requirements under federal, state, or local laws and regulations.

VII. ADDITIONAL INFORMATION

Other precautions:

1. Do not touch cast aluminum metal or heated aluminum product without knowing metal temperature. Aluminum experiences no color change during heating. Burns could result.
2. Aluminum powder must be packaged and shipped as a flammable solid.
3. Hard alloy ingots in the 2000 and 7000 Series must be stress relieved to prevent explosion when sawed.
4. The welding of aluminum alloys may generate carbon monoxide, carbon dioxide, ozone, nitrogen oxides, infrared radiation and ultraviolet radiation.