

MATERIAL SAFETY DATA SHEET



LOVEJOY TOOL COMPANY, INC.
133 MAIN STREET
PO BOX 949
SPRINGFIELD, VT 05156

Section 1 **Product Information** **Rev. Level: A** **Page 1 of 7**

Trade Name and Synonyms: 6XXX Series Alloys (Aluminum Coil, Flat Sheet or Plate).

This product may be anyone of the following alloys: 6010, 6061, 6082, K062, k412, K423

Product Use: Fabrication of Items

Section 2 **Composition, Upper Limits of Ingredients (percentage by weight)**

<u>Alloy</u>	<u>Si</u>	<u>Fe</u>	<u>Cu</u>	<u>Mn</u>	<u>Mg</u>	<u>Cr</u>	<u>Zn</u>	<u>Ti</u>	<u>Al Min.</u>
6010	1.20	0.50	0.60	0.80	1.00	0.10	0.25	0.10	95.4
6061	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	96.0
6082	1.30	0.50	0.10	1.00	1.20	0.25	0.20	0.10	95.3
K062	0.80	0.70	0.40	0.15	1.50	0.35	0.25	0.15	96.0
K412	1.80	0.70	0.30	1.00	0.80	0.10	0.40	0.10	94.8
K423	2.30	0.70	0.32	1.00	0.80	0.10	0.40	0.10	94.2

CAS Numbers: Aluminum (7429-90-5); Chromium (7440-47-3); Copper (7440-50-8); Iron (7439-89-6); Magnesium (7439-95-4); Manganese (7439-96-5); Silicon (7440-21-3); Titanium (744-32-6); Zinc (7440-66-6)

Section 3 **Occupational Exposure Limits (TWA's in mg/m³)**

		<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Aluminum,	total dust	10.0	15.0 (total); 5 (respirable)
	fume	5.0	5.0
Chromium		0.5 (metal & Cr III)	1.0 (metal & insoluble salts)
		0.05 (water soluble Cr VI)	0.5 (Cr II & Cr III)
		0.01 (insoluble Cr VI)	
Copper		0.20 (fume)	0.10
Iron		5.0 (oxide dust & fumes)	10.0 (total oxide particulate)
Manganese		0.2	5.0 (ceiling)
Magnesium		10.0 (oxide fume)	15.0 (total oxide particulate)
Silicon		10.0	15.0 (total); 5 (respirable)
Titanium Dioxide dust		10.0	N/A
Zinc		5.0 (fume); 10.0 (dust)	5.0 (respirable); 10.0 (total dust)



Section 4**Physical and Chemical Properties**

Rev. Level: A

Page 2 of 7

Appearance: Solid, silvery-white color. Shape is large coils of metal.**Odor:** N/A**Physical State:** Solid**Boiling Point:** N/A**Melting Point:** 950 - 1220° (510-660°)**pH:** N/A**Specific Gravity:** 2.7 (water = 1)**Vapor Pressure:** N/A**Solubility:** Soluble in strong acids and alkalis.**Vapor Density:** N/A

Section 5**Fire and Explosion Hazard Data**

Hazard Identification (Emergency Overview):

This product as metal coil, sheet or as a finished article is considered to be practically non-toxic under normal conditions. It is a solid, silvery, odorless and non-flammable. Dust clouds may be explosive. Water coming in contact with molten metal may be explosive. Dust, small chips and fines can generate flammable/explosive hydrogen gas on contact with water. Do not confine this mixture.

This product does not present a fire or explosion hazard under normal conditions.

Flammable Properties: Small chips, fines and dust can ignite.

Fire and Explosion: Adding water to molten metal can cause an explosion. Ensure aluminum is fully dry before melting. Dust clouds can be explosive, and should be prevented with adequate ventilation.

Extinguishing Media: Fires involving molten metal, use class "D" fire extinguishers. **DO NOT USE WATER.** Fires involving chips, fines or dusts, use water spray. **DO NOT USE HALOGENATED EXTINGUISHING AGENTS.**

Section 6**Health Hazard Data**

Eye: Dust or chips may cause abrasions.

Skin: Dust or chips may cause abrasions. Hot metal may cause burns.

Ingestion: Not a hazard.

Inhalation: Dusts and fines present a low health risk. Overexposure to zinc and copper fumes may cause "metal fume fever" resulting in temporary flu-like symptoms. Chronic overexposure to manganese fumes could cause nervous system disorders, inflammation and/or scarring of the lungs.

Section 7**First Aid Measures**

Eye: Flush the eyes with clean water for 15 minutes. Seek medical attention if irritation persists.

Skin: Wash with soap and water. For minor burns, apply cold water. For more severe burns, seek medical attention.

Ingestion: Not a hazard.

Inhalation: Remove to fresh air. Seek medical attention if symptoms develop.



Aluminum: Aluminum dusts and fumes are practically non-toxic. Overexposure to fumes or dust may cause slight irritation to the eyes, nose and throat. There is no evidence of carcinogenicity.

Chromium: Chromium metal dust is practically non-toxic. Chromium III compound dusts may irritate the eyes, skin and nose. Chromium VI compounds are irritating and considered carcinogens by IARC, NTP and ACGIH.

Copper: Overexposure to copper fumes or fine dusts may cause Metal Fume Fever with flu-like symptoms. There is no evidence of carcinogenicity.

Iron: Iron does not have significant toxicology. There is no evidence of carcinogenicity.

Magnesium: Magnesium oxide (MgO) dusts may cause slight irritation of the eye and nose. MgO fume may cause Metal Fume Fever with flu-like symptoms. There is no evidence of carcinogenicity.

Manganese: Acute overexposure to manganese oxide fume may cause Metal Fume Fever with flu-like symptoms. Chronic overexposure might cause a CNS disorder resembling Parkinsonism or susceptibility to lung infections. There is no evidence of carcinogenicity.

Silicon: Silicon is a nuisance dust and an eye irritant. There is no evidence of carcinogenicity.

Titanium: Titanium has no significant toxicology.

Zinc: High levels of zinc dust may irritate the nose and throat. Overexposure to zinc oxide fume may cause Metal Fume Fever with flu-like symptoms. There is not evidence of carcinogenicity.

<u>Ingredient</u>	<u>IDLH</u>	<u>LD50</u>	<u>LC50</u>
Aluminum	N.D.	N.D.	N.D.
Chromium	250 mg/m ³	Mouse (ip): 3.5 gm/kg	N.D.
Copper	100 mg/m ³	Mouse (ip): 3.5 gm/kg	N.D.
Iron	2.5 gm/m ³	Rat (or): 30 gm/kg	N.D.
Magnesium	N.D.	N.D.	N.D.
Manganese	500 mg/m ³	Rat (or): 9 gm/kg	N.D.
Silicon	N.D.	Rat (or): 3.2 gm/kg	N.D.
Titanium	N.D.	N.D.	N.D.
Zinc (oxide fume)	500 mg/m ³	N.D.	N.D.

N.D. = Not Determined

Section 13**Ecological Information**

No information found concerning these aluminum alloys.

Section 14**Disposal Considerations**

Collect scrap for recycling/remelting. These aluminum alloys are not federally regulated as RCRA Hazardous Waste.



The U.S. Department of Transportation does not regulate these aluminum alloys. United Nations/North American number (UN/NA): None

Section 16**Regulatory Information**

TSCA: All components of these aluminum alloys are listed on the TSCA Section 8(b) Chemical Inventory.

WHMIS: This MSDS was prepared in compliance with WHMIS requirements. Except for aluminum, chromium and manganese, all materials in these alloys, present on the Ingredient Disclosure List, are in concentrations less than the reporting threshold concentrations.

OSHA Hazard Communications Rule, 29 CFR 1910.1200: The Aluminum, Chromium, Copper, Iron, Magnesium, manganese, Silicon and Zinc components of these alloys are subject to the OSHA HAZCOM requirements.

CERCLA/SUPERFUND, 40 CFR 117, 302: These alloys contain the following Reportable Quantity (RQ) substances: Chromium, Copper and Zinc.

SARA 313 Information: The following materials are subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

<u>Chemical Name</u>	<u>CAS#</u>	<u>Concentration</u>
Aluminum (fume & dust only)	7429-90-5	greater than 94.3%
Chromium	7440-47-3	0.35% or less
Copper	7440-50-8	0.60% or less
Manganese	7439-96-5	1.20% or less
Zinc (fume & dust only)	7440-66-6	0.40% or less

Note: Aluminum fume (7429-90-5) may be formed if the product is welded, brazed, silver soldered or melted. Aluminum dust (7429-90-5) may be formed if the product is cut or ground.

California Proposition 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986. Depending on the alloy, it may contain Chromium. This metal is known to the State of California to cause cancer or reproductive toxicity.

Massachusetts Substance List: Aluminum, Chromium, Copper, Magnesium, Manganese, and Zinc

New Jersey Right-To-Know Hazardous Substance List: Aluminum, Chromium, Copper, Magnesium, Manganese, and Zinc.

Pennsylvania Hazardous Substance List: Aluminum, Chromium, Copper, Magnesium, Manganese, and Zinc.



The information contained herein is based upon data provided by manufacturers and suppliers or other authoritative references. The information is offered in good faith as accurate and correct, but no representations, guarantees, or warranties of any kind are made as to its accuracy or completeness, suitability for particular applications, hazards connected with the use of the product, or the results to be obtained from the use of thereof. User assumes all risk and liability of any use or handling of any material beyond Lovejoy's control. Variations in methods, conditions, equipment used to store, handle, or process the material, and hazards connected with the use of the product are solely the responsibility of the user and remain at its sole discretion.

When applicable, the products described in this MSDS are considered to be "articles" within the meaning of Title 29 of the Code of Federal Regulations, Section 1910.1200 et seq. This MSDS is intended to be used solely for the purpose of satisfying informational request made pursuant to that requirement. It is not intended to pre-empt, replace, or expand the terms contained in the Lovejoy Tool Co., Inc. Conditions of Sale.

Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe workplace, to examine all aspects of its operation, and to determine if or where precautions, in addition to those described herein, are required. This information may not be valid for these products when manufactured with alternate materials meeting the special requirements of a particular user.

LOVEJOY TOOL CO., INC. MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN CASE OF QUESTIONS PLEASE CALL:

Company Name: Lovejoy Tool Company, Inc.

Contact and Title of Individual: Kristi C. Morris, Engineering Manager

Telephone Number: (802) 885-2194



ACGIH:	American Conference of Governmental Industrial Hygienists
CAS#:	Chemical Abstract Service Number
CERCLA:	Comprehensive Environmental Response, Compensation and Liability Act
CNS:	Central Nervous System
IARC:	International Agency for Research on Cancer, World health Organization
IDLH:	Immediately Dangerous to Life and Health
LC50:	Lethal concentration for 50% of the test population
LD50:	Lethal dose for 50% of the test population
MSDS:	Material Safety Data Sheet
N/A:	Not Applicable
N.D.:	Not Determined
NTP:	National Toxicology Program, Seventh Annual Report on Carcinogens
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit
PPM:	Parts Per Million
SARA 313:	Superfund Amendments and Reauthorization Act of 1986, Section 313
TLV:	Threshold Limit Value
TSCA:	Toxic Substances Control Act
TWA:	Time Weighted-Average
WHMIS:	Workplace Hazardous Materials Information System (Canada)