

# MATERIAL SAFETY DATA SHEET



LOVEJOY TOOL COMPANY, INC.  
133 MAIN STREET  
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**Section 1** **Product Information** **Rev. Level: A** **Page 1 of 5**

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**Trade Name and Synonyms:** Alloy Steel

**Chemical Family:** Metals

**Formula:** Not applicable

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**Section 2** **Product Description and Hazardous Ingredients/Identify Information**

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See Chart for Listing (page 5)

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**Section 3** **Physical Data**

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**Melting Point F (C):** Greater than 2800 (1540)

**Vapor Pressure:** Not applicable

**Vapor Density (Air = 1):** Not applicable

**Solubility in Water:** Negligible

**Appearance and Odor:** Grayish to silvery odorless sheet, strip, plate, bar, structural shapes, pipe and tubing.

**Specific Gravity (H<sub>2</sub>O = 1):** Greater than 7

**% Volatile by Volume (%):** Not applicable

**Evaporation Rate:** Not applicable

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**Section 4** **Fire and Explosion Hazard Data**

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**Flash Point F (C):** Not applicable

**Extinguishing Media:** Use methods applicable to surrounding area.

**Special Fire Fighting Procedures:** Use self-contained breathing apparatus for protection against degradation products and fire fighting technique or agent(s) applicable to surrounding materials.

**Flammable Limits:** Not applicable

**Unusual Fire and Explosion Hazards:** None

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**Section 5** **Health Hazard Data**

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**Applicable Statutory or Recommended Occupational Exposure Limits:** No Threshold Limit Value (TLV) or Permissible Exposure Limit (PEL) exists for steel. Steel products in the natural state do not present an inhalation, ingestion or contact hazard. However, operations such as burning, welding, sawing, brazing, and grinding may result in the following effects if exposures exceed permissible limits as listed in Section 2 of the individual constituents.

**Effects of Overexposure:** Acute-Dust or fume may cause irritation to the eyes, nose, or throat; leave a metallic taste in the mouth; result in metal fume fever; or produce flu-like symptoms.



Chronic	Aluminum	-Physical irritation	Nickel	-Lung damage, skin sensitizer, some compounds may cause cancer, Listed NTPARC and IARC Monograph
	Bismuth	-Physical irritation	Phosphorous	-Lower jaw bone damage
	Boron	-Physical irritation	Sulfur	-Affects lung
	Cobalt	-Blood, heart, bone marrow, thyroid, lung and pancreatic damage	Selenium	-Nasal and lung irritation, stomach or bowel disturbance, garlic odor of breath
	Chromium	-Skin, nasal tissue damage, cancer, possible mutations	Tellurium	-Garlic breath and perspiration, metallic taste, dry mouth, nausea, reduced sweating, loss of appetite
	Copper	-Physical irritations	Titanium	-Physical irritation
	Iron	-Lung damage	Vanadium	-Lung damage
	Lead	-Metallic taste, weakness, constipation, nausea, nervous disorder, blood and urinary damage, reproductive and possible cancer hazard	Zinc	-Affects blood cells
	Manganese	-Lung damage, lack of coordination	*Coating Oils	-Steel coated with an oil may result in a mild skin irritation upon prolonged and repeated contact. Wear gloves and/or wash skin following contact to prevent skin irritation.
	Molybdenum	-Affects liver, kidney, spleen, blood, cause diarrhea, bone deformation, and growth		

**Usual Route(s) of Entry:** Inhalation

**Emergency and First Aid Procedures:** In the event of acute exposure, remove to fresh air, administer oxygen, and seek physician's assistance.

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**Section 6****Reactivity Data**

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**Stability:** Considered Stable

**Incompatibility:** Not incompatible with materials

**Hazardous Polymerization:** Not applicable

**Hazardous Decomposition Products:** Not applicable

**Conditions to Avoid:** May liberate metal fumes, metal oxides, or other oxides if exposed to elevated temperatures.



**Steps to be taken in Case Material is Released or Spilled:** Not applicable

**Waste Disposal Method:** This material may be reclaimed for reuse.

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**Section 8****Special Protection Information**

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If operations are such that atmospheric levels of contaminants exceed prescribed limits, provide local exhaust ventilation and/or adequate respiratory protection. Consult your regional codes or code of Federal Regulations, Title 29, Part 1910.252, Welding, Cutting and Brazing, 1910.134, Respiratory Protection, and 1910-Subpart Z, Toxic and Hazardous Substances.

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**Section 9****Special Precautions**

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**Precautions to be taken in Handling and Storing:** Not applicable

**Other Precautions:** Not applicable

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**Section 10****Super fund Amendments and Reauthorization Act of 1986 (S.A.R.A.)**

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SARA Title III Section 313 and 40 CFR Part 372: The chemicals identified by (\*) in Section 2 denote a toxic chemical or chemicals subject to reporting requirements of Section 313 of Title III, and 40 CFR Part 372.

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**Section 11****California Proposition 65**

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One or more of the alloys listed on this sheet contains a material known to the state of California to cause cancer or reproductive toxicity. These are:

<u>Material</u>	<u>Listed Effect</u>
Nickel	Cancer
Lead	Reproductive Toxicity

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**Section 12****Disclaimer**

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The information contained herein is based upon data provided by manufacturers and suppliers of raw materials used in the manufacture of alloy steel. 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.

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**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



**Non-resulfurized Carbon Steel: Vanadium Bearing**      AISI Grade/Trade Name      1005-1095

**Alloying Elements**

Iron	*Maganese	Carbo	*Aluminum	*Chromiu	*Copper	Molybdenum	*Nickel	Phosphorou	Silicon	Sulfur	Vanadium
	e	n		m				s			
>95	<1.0	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

**Standard Alloy Steel: Molybdenum and Chromium**      AISI Grade/Trade Name      4118-4181

**Alloying Elements**

Iron	*Maganese	Carbo	*Aluminum	*Chromiu	*Copper	Molybdenum	Phosphorou	Silicon	Sulfur
	e	n		m			s		
>95	<1.0	<0.7	<0.5	<1.1	<0.5	<0.5	<0.1	<0.3	<0.1

**Standard Alloy Steel: Molybdenum, Chromium and Nickel**      AISI Grade/Trade Name      4320-4340

**Alloying Elements**

Iron	*Maganese	Carbo	*Aluminum	*Chromiu	*Copper	Molybdenum	*Nickel	Phosphorou	Silicon	Sulfur
	e	n		m				s		
>95	<1.0	<0.5	<0.5	<1.0	<0.5	<0.3	<2.0	<0.1	<0.3	<0.1

**Standard Alloy Steel: Molybdenum, Chromium and Nickel**      AISI Grade/Trade Name      8613-8822

**Alloying Elements**

Iron	*Maganese	Carbo	*Aluminum	*Chromiu	*Copper	Molybdenum	*Nickel	Phosphorou	Silicon	Sulfur
		n		m				s		
>95	<1.0	<0.6	<0.5	<0.6	<0.5	<0.3	<0.7	<0.1	<0.3	<0.1