

## MATERIAL SAFETY DATA SHEET (MSDS)

THIS MSDS IS EFFECTIVE JANUARY 1, 2018 AND SUPERSEDES ALL PREVIOUSLY ISSUED SAFETY DATA SHEETS.

### SECTION I (IDENTIFICATION)

Manufacturer/ Processor/Importer:	Eagle Alloys Ltd. Emergency Tel No (780) 481 8082
Address:	10077 - 166 Street Edmonton Alberta T5P 4Y1
Product Name:	Eagle ER 316L
Classification:	AWS ER 316L

### SECTION II (HAZARDOUS INGREDIENTS/IDENTITY INFORMATION)

**IMPORTANT:** This section covers the materials of which the products are manufactured. The fumes and gases produced during normal use of this product are covered in Section V. The term "Hazardous" in "Hazardous Material" should be interpreted as a term required and defined in OSHA Hazard Communication Standard 29CFR 1910-1200 and it does not necessarily imply the existence of hazard.

INGREDIENTS	CAS NUMBER	PERCENT RANGE	OSHA PEL mg/M <sup>3</sup>	ACGIH-TLV mg/M <sup>3</sup>	CARCINOGENICITY
Iron	7439-89-6	60 - 70	5	NAP	No
Carbon	133-84-4	.01		-	No
Silicon	7440-21-3	.43		10	No
Phosphorus	7404-34-9	.025		-	No
Chromium	7440-47-3	18 - 20		0.5	Yes
Manganese	7439-95-5	0 - 2		1	Yes
Nickel	7440-02-0	5 - 14		1	Yes
Molybdenum	7439-96-7	2.31		10	No
Sulfur	7723-14-0	.0002		-	No

### SECTION III (PHYSICAL DATA) Not Applicable

### SECTION IV (FIRE AND EXPLOSION HAZARD DATA)

Non-Flammable - Welding arc and sparks can ignite combustibles. Refer to American National Standard Z49.1 for fire prevention during welding.

### SECTION V (REACTIVITY DATA)

Welding fumes cannot be classified simply. The composition and quality of both are dependent upon the metal being welded, the process, procedures and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating or galvanization), number of welds and volume of work area, quality and amount of ventilation, position of welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

Ceiling Limit: Short Term Exposure

Gaseous reaction products may include carbon monoxide and carbon dioxide.

Ozone and nitrogen oxides may be formed by the radiation from the arc.

One method of determining the composition and quality of the fumes and gases to which the workers are exposed is to take an air sample from the inside of the welder's helmet while worn or within the workers breathing zone. See ANS/AWS F1.1 publication available from the American Welding Society 550 N.W. LeJune Road, Miami, FL, 33135

## SECTION VI (HEALTH HAZARD DATA)

Threshold Limit Value: The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is 5 mg/M<sup>3</sup>. The ACGIH 1984-85 preface states: "The TLV-TWA should be used as guides in the control of health hazards and should not be used as firm lines between safe and dangerous concentrations." See Section VI for specific fume constituents that may modify this TLV.

Effects of Overexposure: FUMES AND GASES can be dangerous to your health. Primary route of exposure is inhalation of fumes. Preexisting respiratory or allergic conditions may be aggravated in some individuals. SHORT-TERM (ACUTE) OVEREXPOSURE to welding fumes may result in discomfort such as : dizziness, nausea, or dryness or irritation of nose, throat, or eyes. LONG-TERM (CHRONIC) OVEREXPOSURE may lead to siderosis (iron deposits in the lungs) and is believed by some investigators to affect pulmonary function. ARC RAYS can injure eyes and burn skin. ELECTRIC SHOCK can kill. See Section VII.

Emergency & first Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the Canadian Red Cross.

Carcinogenicity	NTP	I Arc Monographs	OSHA Regulated
When Present	Cr	Cr	Cr

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## SECTION VII

### (PRECAUTION FOR SAFE HANDLING AND USE/APPLICABLE CONTROL MEASURES)

Read and understand the manufacturer's instructions and the precautionary label on this product. See American National Standard Z-49.1, Safety in Welding and cutting, published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA Publication 2206 (29CFR 1910), U.S. Government Printing Office, Washington D.C. 20402 for more detail on the following;

VENTILATION: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases below the TLV'S in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.

Respiratory Protection: Use respirable fume respirator or air supplies when welding in confined space or where local exhaust or ventilation does not keep exposure below TLV.

Eye Protection: Wear helmet or use face shield with filter lens. As a rule of thumb, start with a shade darker to see the weld zone. Then go to the next lighter shade, which gives sufficient view of the weld zone. Provide screens and flash goggles, to shield others.

Protective Clothing: Wear Head, hand and body protection, which will help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. At a minimum, this includes welders gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

Waste: Dispose of any grinding or waste residues in accordance with EPA or local regulations.

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