

## MATERIAL SAFETY DATA SHEET (MSDS)

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

### SECTION I (PREPARATION IDENTIFICATION)

Manufacturer/ Processor/Importer:	Eagle Alloys Ltd. Emergency Tel No (780) 481 8082
Address:	10077 - 166 Street Edmonton Alberta T5P 4Y1

### SECTION II (PRODUCT INFORMATION)

Product Name:	Eagle Alloy 6
Classification:	Covered Electrode for SMAW

### SECTION III (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	0 - 95	10	5	NO
Fluoride	7789-75-5	0 - 2	3	2.5 as F	NO
Boron	1303-96-4	0 - 10	1	5	NO
Cobalt	7740-48-4	0 - 65	0.05	0.05	NO
Chromium	7440-47-3	0 - 40	1	0.5	YES
Manganese	7439-96-5	0 - 20	5 (ceiling)	5 (Ceiling)	NO
Molybdenum	7439-98-7	0 - 8	15	10	NO
Graphite	7781-75-5	0 - 10	None	15 mppcf	NO
Tungsten	7440—33-7	0 - 60	None	5 (10 Stel)	NO
Vanadium	7440-62-2	0 - 18	0.1 Clg	035 as <sub>2</sub> O <sub>5</sub>	NO
Carbon	7440-44-0	0 - 7	None	15 mppcf	NO
Tungsten Carbide	12070-12-1	1 - 5	N/A	5	NO
Nickel	7440-02-0	0 - 5	1	1	YES
Titanium Dioxide	13463-67-7	0 - 5	15	10 (20 Stel)	NO
Columbium	7429-90-5	0 - 8	15	10	NO
Silicon	7440-21-3	0 - 3	5	10	NO

Mppcf = millions of particles per cubic foot of air.

### SECTION IV (PHYSICAL DATA)

Form: Coated Electrode Melting Point 2150 – 2750 F Color: Gray metallic

### SECTION V (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 VI (REACTIVITY DATA)

Welding fumes cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, the procedures and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which worker's may be exposed include: coatings on

## SECTION VI (REACTIVITY DATA) CON'T

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 weldor'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).

When the electrode is consumed, the fume and gas decomposition products are different in percent and form the ingredients listed in Section II. Fume and gas decomposition products, not the ingredients in the electrode, are important. Decomposition products include those originating from the volatilization, reaction, or

oxidation of the materials shown in Section II plus those from the base metal, coating, etc. as note above. The components are virtually always present as complex compounds and not as metals (Characterization of Arc Welding Fume: American Welding Society).

Reasonably expected fume constituents would include fluorides and complex oxides of iron, chromium, manganese, silicon and molybdenum. Fume limit for Cr VI ( $0.05 \text{ mg/M}^3$ ) may be reached before limit of  $5 \text{ mg/M}^3$  for general welding fume is reached. Monitor Cr VI level. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc in TIG welding.

One recommended way to determine the composition and quantity of fumes and gases to which worker's are exposed is to take an air sample inside the weldor's helmet, if worn, or in the worker's breathing zone.

ANSI/AWS F1.1 available from the American Welding Society. P.O. Box 351040, Miami, FL 33135.

## SECTION VII (HEALTH HAZARD DATA)

Threshold Limit Value: The ACGIH recommended general limit for welding fume NOC (Not Otherwise Classified) is  $5 \text{ mg/M}^3$ . 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 V 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, 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.

Carcinogenicity When Present	NTP? Cr	I Arc Monographs Cr	OSHA Regulated Cr
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## SECTION VIII

### (PRECAUTIONARY 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 details 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 weldor to keep his head out of the fumes.

Respiratory Protection: Use respirable fume respirator or air supplies respirator 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 that gives sufficient view of the weld zone. Provide screens and flash goggles, to shield others.

Protective Clothing: Wear head, hand and body protection that will help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. At a minimum, this includes weldor's gloves and a protective face shield and may include arm protectors, aprons, hats, shoulder protection, as well as dark and substantial clothing.

Train the welder not to touch live electrical parts and to insulate himself from work and ground.

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

## SECTION IX (FIRST AID MEASURES)

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

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