SAFETY DATA SHEET

ROCKMOUNT Welding Alloys

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ELECTRA PLUS BARS

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2. HAZARDS IDENTIFICATION

Emergency Overview: Solid metallic products are generally classified as "articles" and do not constitute hazardous materials in solid form under the definitions of the OSHA Hazard Communication Standard (29 CFR 1910.1200). Any articles manufactured from these solid products would be generally classified as non-hazardous. However, some hazardous elements contained in these products can be emitted under certain processing conditions such as but not limited to: burning, melting, cutting, sawing, brazing, grinding, machining, milling, and welding.
Classification of the Substance/Mixture: Inert, non-hazardous as supplied.

Hazard Statements:
When the cutting rods are consumed in the normal course of work using an exothermic torch (oxygen lance) airborne metal fumes are produced that include: TLV PEL Mg/M3 Mg/M3 Copper Fume 0.2 0.1 Iron Oxide Fume 5.0 5.0 Lead Fume 0.05 0.03 Manganese Fume 0.1 5.0 Nickel Fume 0.015 1.0 Fumes from the material being cut (*Know the target material and the possible by-products).

Precautionary Statements:
BURNING ELECTRA PLUS BARS CAUSES FUMES TO BE RELEASED. MAY BE HARMFUL IF INHALED. MAY IRRITATE THE EYES, SKIN, AND RESPIRATORY TRACT. MOLTEN MATERIAL MAY CAUSE THERMAL BURNS.
Elevated temperature processing (such as burning and cutting) may release hazardous fumes. Overexposure to metal fumes may cause pulmonary edema (fluid in the lungs) and methemaglobinemia. May also cause pulmonary fibrosis and lung cancer. Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system. Inorganic lead compounds can cause developmental damage.

Sparks and fumes from burning metal are produced when operating an exothermic torch. Inhalation of fumes may cause metal-fume fever. Avoid breathing dust/fume/gas/mist/vapors/spray Wear protective gloves/protective clothing/eye protection In case of contact with eyes, rinse immediately with plenty of water and seek medical attention In case of insufficient ventilation, wear suitable respiratory equipment Avoid surrounding combustibles (Burning cutting rod generates sparks)

Sparks, splatter and molten material generated by this process can cause fire, severe property damage, and bodily injury.

Arc rays (UV) and splatter can injure eyes and exposed skin. Always wear proper eye protection with appropriate shade (typically No. 5 or 6) filter.

Coatings and residue may irritate skin and eyes. Wash hands thoroughly with soap and water after handling.

Aggravated Medical Conditions: Allergies, skin disorders, respiratory disorders, central nervous system, pre-existing eye disorders, blood disorders, kidney disorders, liver disorders, nasal cavities, and lungs.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Mild Steel	N/A	>99.50
Copper	7440-50-8	<0.50

Mild steel alloys may contain one or more of the following ingredients which are added intentionally or are present as contaminates or residuals in trace or low concentrations:

Chemical Name	CAS-No	Weight %
Base Metal:		
Iron	7439-89-6	97.00 - 99.00
Alloying Elements:		
Nickel	7440-02-0	0.01-3.75
Chromium	7440-47-3	0.01-2.50
Manganese	7439-96-5	0.25-1.65
Molybdenum	7439-98-7	0.01-1.10
Carbon	7440-40-0	0.01-1.10
Copper	7440-50-8	0.01-0.50
Silicon	7440-21-3	0.01-0.5
Tellurium	13494-80-9	0.01-0.50
Lead	7439-92-1	0.15-0.35
Tin	7440-31-5	0.01-0.05
Sulfur dioxide	7446-09-5	0.001-0.35
Vanadium pentoxide	1314-62-1	0.01-0.25
Bismuth	7440-69-9	0.01-0.10
Aluminum	7429-90-5	0.01- 0.1
Phosphorus	7723-14-0	0.01-0.04

Iron alloys may be comprised of all or variations of the materials shown here.

Important: This section covers the materials of which the products manufactured. The fumes and gases produced during normal use of this product are covered in section 10. 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. The chemicals or compounds reportable by Section 313 of SARA are marked by the symbol #.

4. FIRST AID MEASURES

Notes to Physician: May cause sensitization in susceptible persons. Treat symptomatically.

Emergency and first aid procedures: After inhalation of fumes: Supply fresh air and be sure to call a doctor. Remove patient from exposure, keep warm and at rest. In case of unconsciousness, place patient stably in the recovery position for transportation.

After skin contact: Dusts or particulates may cause mechanical irritation due to abrasion. (Coated steel may cause skin irritation in sensitive individuals) Some components in this product are capable of causing an allergic reaction, possibly resulting in burning, itching and skin eruptions. Contact with heated material may cause thermal burns. Wash skin with soap and water. In the case of burns, skin irritation or allergic reactions see a physician.

After eye contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Consult a physician.

Ingestion - Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention. Do not induce vomiting. Immediately call for medical help. Provided patient is conscious, rinse out mouth with water then give patient 200-300 ml of water to drink. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: May cause eye irritation Skin contact may cause irritation May cause irritation to the respiratory system

5. FIRE FIGHTING MEASURES

This product does not present fire or explosion hazards as shipped.

Suitable Extinguishing Media: For molten metal, use dry powder or sand. Unsuitable Extinguishing Media: DO NOT use water for fires involving molten metal. Do not use Carbon Dioxide (CO2). Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: N/A

Environmental Precautions: Some grades of steel may contain reportable quantities of alloying elements. See Section 15 for additional information. Do not allow to enter drains, sewers or watercourses.

Methods and Material for Containment and Cleanup: Waste Disposal Methods - Dispose used or unused product in accordance with applicable Federal, State, and Local regulations. Please recycle

Reference to Other Sections: Personal Protection: See Section 8.

7. HANDLING AND STORAGE

Storage Temperatures: Stable under normal temperatures and pressures.

Precautions to be taken in Handling and Storing: Keep material dry. Keep in package until ready to use. Avoid contact with sharp edges or heated material. Do not touch face or eyes after handling. Wash hands thoroughly with soap and water.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Operations with potential for generating high concentrations of airborne particulates or fumes should be evaluated and controlled as necessary. Exercise caution when cutting in windy environment. Operators must be trained to avoid electrical shock and UV ray exposure.

Eye Protection: When cutting use safety glasses or protective face shield with #5 or #6 cutting lens. Dust resistant safety goggles are recommended under circumstances where particles could cause mechanical injury.

Skin:
Appropriate protective gloves (leather welding gloves) and protective clothing (suitable for cutting and welding) and protective shoes (leather, steel toed) should be worn as necessary. Good personal hygiene practices should be followed including cleansing exposed skin several times daily with soap and water and laundering or dry cleaning soiled work clothing.

Full face protection, head and neck protection may be necessary based upon environmental conditions and the tendency of the material being cut to spall, spark and spray.

Respiratory Protection: Use only in well ventilated areas. Provide adequate exhaust to assure clean air within the breathing zone. Keep head out of fumes. When cutting materials whose oxides are potentially toxic, use special breathing apparatus.

NIOSH/MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure when burning or cutting and should be used when engineering controls are insufficient to lower welding fumes below the TLV. See Section 2 for component material information exposure limits. If such concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels of dust or fumes below exposure limits.

Exposure Guidelines: No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel. See Section 2 for component materials. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

Welding fumes have been associated with adverse health effects. Contains components that may cause cancer or reproductive effects. The following components are listed by NTP, OSHA, or IARC as carcinogens: Nickel, chromium (hexavalent), cobalt, lead, cadmium, antimony (trioxide), arsenic, and beryllium. See Section 11, for additional, specific information on effects noted above.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Metal tube with metal wires inside
Color: Copper
Boiling Point: Not applicable
Melting Point: Approximately 2800F
pH: Not applicable
Specific Gravity (at 15.6C): Not applicable
Density (at 15.6C): Not applicable
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
% Volatile, by Volume: Not applicable
Solubility in Water: Insoluble.
Evaporation Rate (Butyl Acetate = 1): Not applicable
Other Physical and Chemical Data: None

10. STABILITY AND REACTIVITY

Stability: Stable material
Conditions to Avoid: None
Materials to Avoid: Combustibles (sparks are generated when rod is burning). Reacts with strong acids to form hydrogen gas. Do not store near strong oxidizers.
Hazardous Decomposition Products: Fumes generated during burning/cutting may contain a variety of hazardous components. Know the target material. Molten metal will burn skin. Smoke will irritate eyes. Bright light emitted by flame can damage eyes. UV and heat emitted by flame can damage skin. Refer to ANSI Z49.1

11. TOXICOLOGICAL INFORMATION

Effects of acute exposure to material: Products of combustion include fumes and gases containing iron oxide and copper oxide as well as oxides of the material being cut. Fumes can aggravate asthma or bronchial conditions. Arc rays can burn eyes and skin. Cutting flame produces intense heat and can burn skin and ignite clothing.

The primary component of this product is iron. Long-term exposure to iron dusts or fumes can result in a condition called Siderosis which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion. Penetration of iron particles in the skin or eye may cause an exogenous or ocular Siderosis which may be characterized by a red-brown pigmentation of the affected area. Ingestion overexposures to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver. Iron and steel founding, but not iron or iron oxide, has been listed as potentially carcinogenic by IARC.

When this product is used for cutting, fumes are generated. Cutting/welding fumes may be different in composition from the original cutting/welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects (including cancer) have been associated with the fumes and dusts of individual component metals (see above), and welding fumes as a general category have been listed by IARC as a carcinogen (Group 2B). There is also limited evidence that welding fumes may cause adverse reproductive and fetal effects. Evidence is stronger where welding materials contain known reproductive toxins, e.g., lead which may be present in the coating material of this product.

Breathing fumes or dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. These oxides are produced by heating various metals including cadmium, zinc, magnesium, copper, antimony, nickel, cobalt, manganese, tin, lead, beryllium, silver, chromium, aluminum, selenium, iron, and arsenic. The most common agents involved are zinc and copper.

This product may contain small amounts of manganese. Prolonged exposure to manganese dusts or fumes is associated with "manganism", a Parkinson-like syndrome characterized by a variety of neurological symptoms including muscle spasms, gait disturbances, tremors, and psychoses.

This product may contain small amounts of cadmium. Primary target organs for cadmium overexposure are the lung and the kidney. Because of its cumulative nature, chronic cadmium poisoning can cause serious disease which takes many years to develop and may continue to progress despite cessation of exposure. Progression of the disease may not reflect current exposure conditions. It is also capable of causing a painful osteomalacia called “Itai-Itai” in postmenopausal women, and has caused developmental effects and/or reproductive effects in male and female animals. Cadmium is a listed carcinogen by NTP, OSHA and IARC (Group 1).

This product may contain small amounts of chromium. Prolonged and repeated overexposure to chromium dusts or fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is skin sensitizer. Cancer is generally attributed to the hexavalent (+6) form of chromium which is listed as a carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of nickel. Prolonged and repeated contact with nickel may cause sensitization dermatitis. Inhalation of nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals. Nickel is a listed carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various vanadium compounds have been reported. The major target for vanadium pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory irritation, and systemic effects. Chronic bronchitis, green tongue, conjunctivitis, pharyngitis, rhinitis, rales, chronic productive cough, and tightness of the chest have been reported following overexposure. Allergic reactions resulting from skin and inhalation exposures have also been reported. A statistical association between vanadium air levels and lung cancer has been suggested, but vanadium currently is not regarded as a human carcinogen.

This product may contain small amounts of lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms and legs. Lead is a known reproductive and developmental toxin. It is also associated with central nervous system disorders, anemia, and kidney dysfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure. Elemental lead is listed as an IARC 2B carcinogen.

The product may contain small amounts of copper. Copper dust and fumes can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers and metal fume fever. Other effects from repeated inhalation of copper fumes include a metallic or sweet taste, and discoloration of skin, teeth or hair. Copper also may cause an allergic skin reaction. Overexposure to copper can affect the liver.

12. ECOLOGICAL INFORMATION

Aquatic Eco-toxicological Data: No specific information available on this product. Environmental Fate Data: No specific information available on this product.

13. DISPOSAL CONSIDERATIONS

Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. Dispose in accordance with federal, state, and local health and environmental regulations. Prevent materials from entering drains, sewers, or waterways.

14. TRANSPORT INFORMATION

DOT Proper Shipping Name: Not regulated
DOT Hazard Classification: Not regulated
UN/NA Number: Not applicable
DOT Packing Group: Not applicable
Labeling Requirements: Not applicable
Placards: Not applicable
DOT Hazardous Substance: Not applicable
DOT Marine Pollutant: Not applicable

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture: United States 29 CFR 1910.1200(g), 'Safety data sheets'; EC Regulation (EC) No. 1907/2006., Regulation (EC) No. 1272/2008 (CLP), Directive 67/548/EEC & Directive 1999/45/EC.

This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be hazardous. This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be combustible or hazardous and require protection to comply with applicable Federal, state and local laws and regulations.

CALIFORNIA PROPOSITION 65: This product contains chemicals (antimony [oxide], arsenic, beryllium, chromium [hexavalent], cobalt, cadmium, lead, nickel) known to the State of California to cause cancer and chemicals (cadmium, lead) known to the State of California to cause birth defects or other reproductive harm.

Regulatory Lists: Some components of this product may be specifically listed by individual states; other product-specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

Toxic Substances Control Act (TSCA): Components of this product are listed on the TSCA Inventory.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): Steel is not reportable, however, it contains hazardous substances that may be reportable if released in pieces with diameters less than or equal to 0.004 inches (RQ marked with a "*").

Chemical Name	Reportable Quantity (in lb.)
Antimony	5000*
Arsenic	1*
Beryllium	10*
Cadmium	10*
Chromium	5000*
Copper	5000*
Lead	10*
Nickel	100*
Phosphorus	1
Selenium	100*
Zinc	1000*

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III
SECTION 311/312 HAZARD CATEGORIES:
Immediate Health Effect, Delayed Health Effect
This product contains the following EPCRA Section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right – To – Know Act of 1986 (40 CFR 372):

Section 15: Regulatory Information (continued)

SECTION 313 REPORTABLE INGREDIENTS:

Chemical Name	CAS Number	Concentration (% by weight)	Reportable
Aluminum	7429-90-5	<0.01	No – Less than 1%
Antimony	7440-36-0	<0.9	No – Less than 1%
Arsenic	7440-38-2	<0.09	No – Less than 0.1%
Beryllium	7440-43-9	<0.09	No – Less than 0.1%
Cadmium	7440-43-9	<0.09	No – Less than 0.1%
Chromium	7440-47-3	0.01-1.0	Yes – greater than 0.1%
Cobalt	7440-48-4	<0.09	No – Less than 0.1%
Copper	7440-50-8	<0.9	No – Less than 1%
Lead	7439-92-1	<0.05	No – Less than 0.1%
Manganese	7439-96-5	0.2-2	Yes – Greater than 1%
Nickel	7440-02-0	<1.0	Yes – Greater than 0.1%
Phosphorus	7723-14-0	<0.9	No – Less than 1%
Selenium	7782-49-2	<0.9	No – Less than 1%
Vanadium	7440-62-2	<0.9	No – Less than 1%
Zinc	7440-66-6	0-0.10	No – Less than 1%

Concentrations based on analytical data of typical products.

16. OTHER INFORMATION

The information and recommendations contained herein are based upon data believed to be up-to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information and recommendations contained herein. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. Rockmount Research and Alloys, Inc. accepts no responsibility and disclaims all liability for any harmful effects that may be caused by (incorrect) use, handling, purchase, resale, or exposure to our product. During burning or cutting, precautions should be taken for airborne contaminants that may originate from components of the cutting rod. Arc or spark generated when burning or cutting could be a source of ignition for combustible and/or flammable materials. Customers and users of our product must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24, U.S. Code Of Federal Regulations, and relevant national legislation.

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