

MATERIAL SAFETY DATA SHEET

SECTION I	MSDS#: AH0903G
	DATE: December 28, 2008
MANUFACTURER'S NAME:	Electralloy
EMERGENCY PHONE/FAX:	Phone: (814) 678-4200 FAX: (814) 676-5876
ADDRESS:	175 Main Street, Oil City, PA 16301
PRODUCT NAME:	Stainless Steel & Maraging Steel
CHEMICAL FAMILY:	Steel
OTHER DESIGNATIONS:	Ingots, Bar, Billet, Plate, Strip, Block, Electrode & Remelt Pig

SECTION II	CAS #	RANGE%	TLV	OSHA PEL
CHEMICAL COMPONENTS				
**Nickel	7440-02-0	0-50	1 mg/m ³	1 mg/m ³
**Nickel Oxide			0.2 mg/m ³ (as Ni)	1 mg/m ³ (as Ni)
Iron (iron oxide)	1309-37-1	0-90	5 mg/m ³ (Dust or Fume)	10 mg/m ³
**Copper	7440-50-8	0-10	0.2 mg/m ³ (fume) 1 mg/m ³ (dust & mist)	0.1 mg/m ³ (fume) 1 mg/m ³ (dust & mist)
**Chromium III	7440-47-3	0-40	0.5 mg/m ³ (as Cr)	0.5 mg/m ³ (as Cr)
**Chromium (Metal)			0.5 mg/m ³	1 mg/m ³
**Chromium IV				5µg/ m ³
Molybdenum	7439-98-7	0-30	0.5 mg/m ³ (Inhalable fraction)	5 mg/m ³
(Soluble compounds as Mo)				
Tungsten	7440-33-7	0-5	5 mg/m ³	None
**Cobalt	7440-48-4	0-20	0.2 mg/m ³	0.1 mg/m ³ (dust & fume as Co)
Silicon	7440-21-3	0-5.0	10 mg/m ³	15 mg/m ³ (Total dust) 5 mg/m ³ (Resp. Fraction)
Sulfur	7446-09-5	0-0.5	5.2 mg/m ³	13 mg/m ³
**Manganese	7439-96-5	0-25	0.2 mg/m ³	5 mg/m ³
Titanium	7440-32-6	0-5.0	None	None
**Aluminum	7429-90-5	0-10	10 mg/m ³	15 mg/m ³ (Total dust) 5 mg/m ³ (Resp. Fraction)
Carbon	1333-86-4	0-3	3.5 mg/m ³	3.5 mg/m ³
Vanadium	1314-62-1	0-3	0.05 mg/m ³ (Resp. Dust or Fume)	0.5 mg/m ³ (Resp. Dust) 0.1 mg/m ³ (Resp. Fume)
Phosphorus	7723-14-0	0-0.5	0.1 mg/m ³	0.1 mg/m ³
Columbium	7440-03-1	0-2	None	None
*PNOC		0-10	10 mg/m ³	15 mg/m ³
PNOC Respirable		0-10	3 mg/m ³	5 mg/m ³
N/A = NOT APPLICABLE UN = UNKNOWN * PNOC = Particles not otherwise classified. **SARA Title III, Section 313 Reportable.				

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SECTION III

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PHYSICAL DATA

Boiling Point (degrees F)	N/A	Specific Gravity (H ₂ O=1)	7.5-8.5
Vapor Pressure (MM HG)	N/A	Percent Volatile by Volume (%)	N/A
Vapor Density (Air = 1)	N/A	Evaporation Rate (H ₂ O=1)	N/A
Solubility in Water	N/A	Melting Point	2400-2800°F
Appearance & Odor: Metallic and odorless solid.			

SECTION IV

FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used)	N/A	Flammable Units	N/A
Extinguishing Media	N/A	()	LEL
Special Fire Fighting Procedures	N/A	()	UEL
Unusual fire explosion hazards	N/A		

SECTION V

HEALTH HAZARD DATA

(X) Major Exposure Hazard	(X) Inhalation	() Skin Contact
	() Ingestion	() Skin Absorption

NOTE: Steel products in the natural state do not present an inhalation, injection, or contact hazard. However, operation such as burning, welding, sawing, brazing, or grinding may result in the following effects if exposures exceed permissible limits:

ACUTE: Excessive inhalation of fumes from many metals can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever (very similar to the flu type symptoms) which come on in a few hours after high levels of exposure.

CHRONIC: Excessive and repeated overexposure of nickel and chromium can cause various forms of dermatitis, inflammation and/or ulceration of upper respiratory tract. Both chromium and nickel have been associated with upper respiratory cancer. Excessive and repeated overexposure of iron fumes can cause siderosis. Excessive and prolonged inhalation of manganese fumes can cause bronchitis, pneumonitis, and lack of coordination.

EMERGENCY FIRST AID PROCEDURES:

In case of excessive exposure, remove to fresh air, administer oxygen, and contact physician immediately.

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SECTION VI

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REACTIVITY DATA

(X) Stable () Unstable Conditions to Avoid: N/A
Incompatibility (materials to avoid): N/A
Decomposition Products: N/A
Hazardous () May occur Conditions to Avoid : N/A
Polymerization (X) Will not occur

SECTION VII

SPILL OR LEAK PROCEDURE

Steps to be taken in case material is released or spilled: N/A

Waste disposal method: Dispose in accordance with federal, state, local regulations.

Precautions to be taken in handling and storage: N/A

SECTION VIII

PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

For welding, burning, grinding, and cutting operations, local ventilation should be provided. If fumes or dust cannot be controlled with exhaust ventilation, an appropriate NIOSH - approved respirator should be used to prevent excessive inhalation exposure.

GLOVES: Gloves may be necessary to prevent skin sensitization and dermatitis.

EYE PROTECTION: Approved safety glasses or goggles should be worn when working with dusty metals.

NOTE: A review of the OSHA Cr VI standard is necessary.

PREPARED BY: ELECTRALLOY

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