



ALLOY CAST PRODUCTS, INC.
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MATERIAL SAFETY DATA SHEET

I GENERAL INFORMATION

Identity: Cobalt Alloy Date January 2001
Synonyms: **REXALLOY**[®]™ MSDS: #005
Family: Inorganic Compounds Revision: 2
(**REXALLOY**[®]™ a proprietary trademark of Alloy Cast Products, Inc.)

Manufacturer's Name: North American Hogenas (*sole authorized producer of primary ingot exclusively for ALLOY CAST PRODUCTS, INC.*)
Manufacturer's Address: P.O. Box 509
Hollsopple, PA 15935-0509
Information Telephone Number: 814-479-2551
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Fax Telephone Number: 814-479-2003

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II INGREDIENTS

Ingredients	CAS #	% wt.		Exposure Limits	
				OSHA <u>PEL</u> mg/M3	ACGIH <u>TLV</u> mg/M3
Iron	1309-37-1	.10-20.0	PEL as Iron Oxide Fume	10	5
Carbon	7440-44-0	.01-2.0	PEL as Nuisance Dust	15	10
@ Manganese	7439-96-5	.01-2.0	PEL as Manganese Dust as Manganese Fume	5(c) 5(c)	5 1
Phosphorous	7723-14-0	.001-0.080	PEL as Nuisance Dust	15	10
Sulfur	7704-34-9	.001-0.080	PEL as Nuisance Dust	15	10
Silicon	7440-21-3	.001-2.50	PEL as Nuisance Dust	15	10
e Chromium	7440-47-3	0.05-35.0	PEL as Chromium Metal as Chromium (VI)	1 .1	.5 .05
@ Nickel	7440-02-0	.50-25.0	PEL as Nickel	1	1
Molybdenum	7439-98-7	.05-10.00	PEL Insoluble Compounds	15	10
Vanadium	7440-62-2	.02-5.00	PEL as V205 Fume	.1(c)	.5
@ Cobalt	7440-48-4	.01-25.0	PEL as Cobalt Fume & Dust	.1	.05
Tungsten	7440-33-7	.01-20.0	PEL as Nuisance Dust	151	10

@ denotes this product contains a toxic chemical of chemicals subject to the reporting requirements of section 313 of Title III of the Supervened Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

The above chemistries are provided for industrial hygiene and environmental purposes and are not intended to represent product specifications. This information has been compiled from data believed to be reliable. Elements such as aluminum, arsenic, boron, calcium, cadmium, copper, lead, tin, titanium, and zirconium may be present in trace amounts. Steel products as shipped do not present an exposure hazard.

III PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point:	N/A	Melting Point:	2200-25000F
Vapor Pressure: (mm Hg)	N/A	Specific Gravity (H2O = 1)	7.5 TO 8.5
Vapor Density: (Air = 1)	N/A		
Solubility in Water:	Insoluble	Appearance and Odor:	Solid Gray, odorless, metal

IV PHYSICAL AND CHEMICAL HAZARDS

Flash Point:	Not Flammable	LEL:	N/A
Extinguishing Media:	N/A	UEL:	N/A
Special Fire Fighting Procedures:	N/A		
Unusual Fire and Explosion Hazards:	N/A		

V REACTIVITY DATA

Stability:	Stable	Conditions to avoid:	N/A
Incompatibility:	N/A		
Hazardous decomposition or byproducts:	None		
Polymerization:	Will not occur.		

VI HEALTH HAZARD DATA

Routes of Entry	Inhalation:	Yes
	Skin:	No
	Ingestion:	No
	Eye contact:	No

Health Hazards:

Iron Oxide

Prolonged or repeated exposures to high concentrations may cause lung changes considered to be a benign pneumoconiosis (siderosis). Inhalation of iron oxide may cause irritation of eyes, nose, and throat, and metal fume fever.

Manganese

Exposure may cause irritation of eyes, nose, and throat, metallic taste in mouth and metal fume fever. Advanced exposure symptoms may include weakness, sleepiness, nervousness, lack of coordination, uncontrollable laughter, mental confusion, speech disturbances, and aggressiveness. Manganese may cause bronchitis, pneumonitis and central nervous system disturbances.

Chromium and/or Nickel

Certain forms of chromium and nickel have been associated with cancer of the lungs and nasal passages. Elemental, divalent and trivalent chromium compounds, i.e. as in steel, have not been found to cause cancer in humans. Nickel and chromium have been found to cause adverse skin and respiratory reactions including dermatitis, bronchitis, ulceration and perforation of the nasal septum, coughing, wheezing, and dyspnea. Skin contact generally under high temperature and humidity has been associated with a dermatitis known as "Nickel Itch"

Molybdenum

Slight irritation of eyes, nose and throat. Animal studies suggest the possibility of digestive disturbances such as: colic, diarrhea, weight loss, and the development of pneumoconiosis, anemia, and gout.

Vanadium

Irritation of respiratory tract and conjunctivae. Excessive exposure may result in skin pallor, greenish discoloration of the tongue, eczematous skin lesions, cough, bronchitis and chest pains. Long term exposure may cause pulmonary edema, pneumonia, chronic bronchitis, anemia, albuminuria and nervous complaints.

Cobalt

Mildly irritating to eyes and skin. Inhalation of dust may cause an asthma like disease with cough and dyspnea which may progress to pneumonia with marked fibrosis. Cobalt chromium alloys have been found to induce cancer in animals and are listed by IARC as potential carcinogens.

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.

CARCINOGENIC REFERENCES:

Certain substances in steel products such as arsenic, chromium, nickel, and cobalt-chromium alloys have been identified by the International Agency for Research on Cancer (IARC) and/or the National Toxicology Program (NTP) as potential cancer causing agents.

VII PRECAUTIONS FOR SAFE HANDLING AND USE

Product is a solid material as shipped. No potential for spill or leak.

VIII CONTROL MEASURES

Ventilation:

If your operation generates particulates when processing this product, local and general ventilation may be necessary to control employee exposures to within applicable limits.

Respiratory protection:

If the exposure limits indicated are exceeded, NIOSH approved respirators for protection against dust and/or fume should be worn in accordance with 29 CFR 1910.134.

Protective equipment:

Appropriate protective equipment should be worn when burning or welding this product.
Gloves should be considered when handling material to prevent cuts and skin irritation.
Approved eye protection is recommended for operations involving burning, grinding, brazing, welding or machining.

IX National Fire Protection Association Ratings

Health: 1

Flammability: 0

Reactivity: 0

Special Hazard: N/A

(DOCUMENT END)