

COBALT BASE ALLOY

MATERIAL SAFETY DATA SHEET

02/05/00
MSDS PROVIDED BY:
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SECTION I - PRODUCT IDENTIFICATION

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SECTION II - HAZARDOUS INGREDIENTS

Ingredient	CAS #	Nominal Chemistry Per Cent	ACGIH TLV Mg/M	OSHA PEL Mg/M
Co Cobalt	7440-48-4	56.4	0.05	0.1
Cr Chromium	7440-47-3	30	0.5	1
W Tungsten	7440-37-1	5	1 (3 STEL)	none
Fe Iron	1309-37-1	2.5	NA	5
Ni Nickel	7440-02-0	2.5	1	1
C Carbon	7440-44-0	1.3	3.7 (7 STEL)	3.5
Si Silicon	7440-21-3	1.3	10 (20 STEL)	none
Mn Manganese	7439-96-5	0.5	10 (20 STEL)	15
Mo Molybdenum	7439-98-7	0.5	5 CL	5 CL
Calcium Fluoride	7789-75-5	<.1	2.5 (As F)	2.5 (As F)
Titanium Dioxide	13463-67-7	<.1	10 (20 STEL)	15
Potassium Titanate	12030-97-6	<.1	5 ND	none
Magnesium Oxide	1309-48-4	<.1	10	15

NOTES: CL= Ceiling Limit STEL = Short Term Exposure Limit ND = Nuisance Dust

*Has been recognized as a suspect carcinogen by NTP and IARC

SECTION III - PHYSICAL DATA

Boiling Point (Deg. F)	N/A	Specific Gravity (H O=1)	Approx. 9
Vapor Pressure (mm Hg.)	N/A	Percent Volatile by Volume	N/A
Vapor Density (Air = 1)	N/A	Evaporation Rate	N/A
Solubility in Water	Insoluble	Melting Point (Deg. F)	Approximately 2700 Deg. F
Appearance and Odor	Metallic gray in color - No odor		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point	N/A
Flammable Limits	N/A
Extinguishing Media	Use dry powder extinguishing agent
Fire & Explosion Hazard	1. Metal powder dispersed in air may cause fire & explosion 2. Molten metal can ignite combustibles 3. Good housekeeping must be maintained

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SECTION V - HEALTH HAZARD DATA

Primary Routes of Entry: Inhalation of dust or fume

Under normal conditions, exposure to continuous cast rod presents few health hazards in itself. Welding with rods & electrodes may produce fumes containing the component elements and breathing those fumes may present potentially significant health hazards. Cobalt causes a dermatitis of the allergic sensitivity type at points of friction. Cobalt toxicity also results in a progressive, diffuse, interstitial pneumonia with a non-productive cough, dyspnea on exertion, interstitial fibrosis and cell damage. Other workers have experienced a sensitized respiratory disease characterized cough, wheezing and shortness of breath where upon removal from the environment, the symptoms subside.

EMERGENCY AND FIRST AID PROCEDURES:

If irritation occurs, flush eyes, wash skin remove to fresh air, as applicable. Consult Physician

SECTION VI - REACTIVITY DATA

Rods and electrodes are stable at ordinary temperatures, however, caution should be taken with acids, bases, and oxidizers. Molten metal will react violently with water.

SECTION VII - SPILL AND LEAK PROCEDURES

Solid rod material will be recycled. Residue from cutting or grinding should be swept or vacuumed and placed in suitable containers for disposal by local, state, or federal waste disposal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection: WHEN EXPOSURE LIMITS ARE EXCEEDED, USE PROPER, APPROVED RESPIRATOR.

Ventilation: USE LOCAL EXHAUST WHEN CUTTING, GRINDING, WELDING, OR MELTING.

Eye Protection and Protective Clothing: SHOULD BE USED WHEN CUTTING, GRINDING, WELDING, OR MELTING.

SECTION IX - SPECIAL PRECAUTIONS

Use good housekeeping practices to prevent accumulations of dust and to keep airborne dust concentrations at a minimum. Avoid breathing dust or fumes.

PEL/TLV exposures should be kept below recommendations by OSHA and ACGIH to insure proper health protection of worker.