

15117 Washington Highway
P. O. Box 1055 Ashland VA

Phone: (804) 227-3381

Fax: (804) 227-3404

CHEMTREC: (800) 424-9300

Poison Center: (800) 562-8236

Safety Data Sheet

Section 1: Product and Company Information

Product Name: Cobalt

Company: Fine Metals Corporation

15117 Washington Hwy

Ashland, VA 23005

For more information call: 1-804-227-3381

(Monday - Friday 9-4:30)

In case of emergency: Transportation (Chemtrec) 1-800-424-9300

Poison Center: 1-800-562-8236

(24 hours/day, 7 days/week)

Section 2: HAZARD IDENTIFICATION

Emergency Overview

Emergency Respiratory Sensitization, Skin Sensitization, Hazard to the Aquatic Environment

Hazard Statements: May cause allergy or asthma symptoms or breathing difficulties if inhaled (H334); May cause an allergic skin reaction (H317); May cause long lasting harm to aquatic life (H413).

Precautionary Statements:

Prevention: Avoid breathing dust/fume/gas/mist/vapours/spray. In case of inadequate ventilation wear respiratory protection. Avoid release to the environment.

Response: If inhaled: If breathing is difficult: Remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a poison control center or doctor/physician. If on skin: Wash with plenty of soap and water.

Appearance/Form:

Form: Solid

Color: Silver grey metal

Odor: None

Hazard Summary: Negligible fire or exposure hazard in bulk form. Powdered material may form explosive dust-air mixture.

Acute Health Effects

Skin: Prolonged exposure to cobalt may cause skin irritation or other allergic reactions in sensitive individuals. Skin absorption is minimal and therefore an unlikely source of systemic problems.

Eyes: Contact may cause eye irritation.

Ingestion: May be harmful if swallowed. Ingestion of powder/dust may cause vomiting and diarrhea.

Inhalation: May cause allergy, asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Chronic Exposure: May cause allergy or asthma symptoms or breathing difficulties if inhaled. Allergic reactions are possible.

Aggravated Medical Conditions: No known effect.

Carcinogenicity: Suspect cancer hazard. 2B Possibly carcinogenic to humans.

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Section 3: Composition/Information on Ingredients

Chemical Name	CAS-No.		Reach #	
Cobalt	7440-48-4	Not available	Not available	>99 wt%

Section 4: FIRST AID MEASURES

Eye Contact: Irrigate eye with water for at least 15 minutes.

Skin Contact: Wash off contaminated areas with water or remove contaminated clothing and shower. Wash clothing before reuse.

Inhalation: If large amounts inhaled or in case of asthma attack - remove to fresh air and contact physician.

Ingestion: If large amounts ingested induce vomiting only if conscious and contact physician.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing Media: Class D dry powder extinguisher, dolomite, dry sand, graphite or soda ash.

Unsuitable extinguishing media: Do not use water.

Specific hazards during firefighting: Dusts at sufficient concentrations can form explosive mixtures with air. May form cobalt oxide.

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Under normal handling and use, material is not dusty and does not present spillage and leakage problems. No protection required, but avoid prolonged or repeated direct skin contact if sensitive to cobalt. In such circumstances, gloves are recommended. Avoid breathing (dust, vapor, mist, gas). Practice good chemical hygiene during and after use.

Environmental Precautions: This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

Methods for Cleaning Up: Isolate hazard area. Eliminate all ignition sources if safe to do so. Avoid formation of dust. Powder spills should be cleaned up either wet or dry. In the latter case, masks should be worn. If vacuums are used, they should be equipped with a high efficiency particulate air-purifying (HEPA) filter. Avoid release to the environment.

Section 7: HANDLING AND STORAGE

Handling: Keep away from heat and flame. Keep container closed when not in use. Remove contaminated clothing and wash before reuse. Wash hands before eating and wash before reuse. Wash thoroughly after handling. Do not eat or drink in a work area.

Storage: Store away from incompatible materials. Cobalt metal should be stored in covered containers to avoid contamination, because of dampness and dust. Partly used containers should be recovered. Otherwise, no special precautions are required.

Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: Use process enclosures, local exhaust ventilation or other means to maintain employee exposure as far below limits as possible

Component Exposure Limits

Component	Location	Value
Cobalt	ACGIH TLV TWA	0.02
	OSHA OEL TWA	0.05
	NIOSH REL TWA	0.05
	Canada- AB, BC, ON, PQ	0.02
	Austria, Hungary TWA	0.1
	Austria Hungary STEL	0.4
	Belgium, Netherlands, Spain	0.02

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Denmark TWA	0.01
Denmark STEL	0.02
Sweden, Switzerland TWA	0.05
Australia, New Zealand TWA	0.05
Singapore TWA	0.02
UK WEL	0.1

Engineering Controls: If solid forms of cobalt are converted to particulate maintain working environment below the recommended exposure limits by use of appropriate ventilation.

Respiratory Protection: If ventilation is inadequate and this material is handled at elevated temperatures or dusts/fumes/mists are generated a NIOSH/MSHA approved air purifying respirator may be permissible where airborne concentrations are expected to exceed exposure limits.

Eye/Face: Wear safety glasses or goggles as appropriate to the task performed.

Skin Protection: With massive materials, no protection is required, except prolonged or repeated skin contact should be avoided if sensitive to cobalt. In such circumstances the use of gloves is recommended.

Work Hygienic Practices: Practice good chemical hygiene during and after use.

Comments: None

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor: None

Color: Light grey

Melting Point: 1495° C

Boiling Point: 2900° C

Vapor Pressure: N/A

Vapor Density (air = 1): N/A

Evaporation Rate: N/A

Solubility In Water: insoluble

Specific Gravity (water = 1): 8.9

Atomic Weight: 58.93

% Volatility By Volume: No information available.

Density: 8.9

Section 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions and usage.

Incompatible Materials: Strong acids, oxidizing materials, acetylene, hydrazinium nitrate, ammonium nitrate

Hazardous Decomposition Products: Toxic metal fumes

Products:

Possibility of Hazardous Reactions: No information available.

Reactions:

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Under normal handling and use, exposure to massive forms of cobalt presents few health hazards. If, however, massive forms are converted to particulate than both acute and chronic health hazards are possible. Exposure can produce various allergic reactions and serious lung damage is known in the metal and diamond polishing industries.

Chronic Toxicity: Particulate/dust/fume exposure over time may damage respiratory function. Asthma, interstitial lung disease and combined asthma and alveolitis have been described as occupational health hazards.

Reproductive Toxicity: In experimental animal studies, cobalt produces adverse developmental effects at doses that produce maternal toxicity. There is no human data on cobalt exposure during pregnancy.

Mutagenicity: Known or suspected mutagen.

Carcinogenicity: IARC: Group 2B- Possibly carcinogenic to humans

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Other: None

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Cobalt has been identified as having potential environmental concerns.

Persistence/Degradability: Cobalt metal is insoluble in water but would dissolve in acids and bases. Cobalt occurs naturally in soils at typical levels of 5-20 micrograms/L, although higher levels are not uncommon. The cobalt content of sea water varies from 0.01 to 4.6 micrograms/L, while the content of fresh water has even greater variability from <0.1 to 10 micrograms/L, depending on local geology and human activity. Cobalt cannot be destroyed in the environment. It can only change its form or become attached or separated from particles.

Bioaccumulation/Accumulation: Plants can accumulate very small amounts of cobalt from the soil, especially in the parts of the plant that you eat most often, such as the fruit, grain, and seeds. While animals that eat these plants will accumulate cobalt, cobalt is not known to biomagnify (produce increasingly higher concentrations) up the food chain. 14 day Bioconcentration Factor (BCF)= 500 (Penaeus aztecus)

Mobility in Environment: The specific fate of cobalt will depend on many factors such as the chemistry of the water and sediment at a site as well as the cobalt concentration and water flow. Cobalt deposited on soil is often strongly attached to soil particles and therefore would not travel very far into the ground. However, the form of the cobalt and the nature of the soil at a particular site will affect how far cobalt will penetrate into the soil. Both in soil and sediment, the amount of cobalt that is mobile will increase under more acidic conditions. Ultimately, most cobalt ends up in the

Section 13: DISPOSAL CONSIDERATIONS

Waste Classification: Cobalt can be recycled and consideration of this route should be given.

All disposal activities must comply with federal, state, provincial and local regulations.

Section 14: TRANSPORT INFORMATION

US DOT (ground): Not regulated

ICAO/IATA (air): UN number 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cobalt)

IMO/IMDG (water): UN number 3077 Class: 9 Packing group: III EMS-No: F-A, S-F Proper shipping name: Environmentally hazardous substance, solid, N.O.S. (Cobalt) Marine pollutant: Marine pollutant

Special Provisions: None

Section 15: REGULATORY INFORMATION

UNITED STATES

SARA Title III (Superfund Amendments and Reauthorization Act) 313 Reportable Ingredients: Yes

TSCA (Toxic Substance Control Act) status: Toxic D2A

STATE REGULATIONS

The following components appear in one or more of the following states hazardous substances

Component	CAS #	CA	MA	MN	NJ
Cobalt	7440-48-4	Yes	Yes	Yes	Yes

California Proposition 65: WARNING! This product contains a chemical known to the State of California to cause cancer.

CANADA

WHMIS (Workplace Hazardous Materials Information System): Toxic D2A

Domestic Substance List (Inventory): All components of this product are included in inventory, exempt or notified.

GENERAL COMMENTS

None

Section 16: OTHER INFORMATION

Information Contact: sds@finemetalscorp.com

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Revision Date: 1/1/2015 soil or sediment.

HMIS®(II)		NFPA	
Health:	2		
Flammability:	0		0
Reactivity:	0	2	0

PPE:

Ratings range from 0 (no hazard) to 4 (severe hazard)

The information contained in this SDS is believed to be correct, but is not all inclusive and shall be used only as a guide. Fine Metals Corporation shall not be liable for any damage resulting from handling or from contact with the product listed in the SDS. Any comments or questions should be directed to:

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Ashland VA 23005
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