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## MATERIAL SAFETY DATA SHEET

### Section 1- PRODUCT IDENTIFICATION

COMPOSITION <b>Co</b>	PRODUCT NAME <b>Cobalt</b>
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### Section 2- HAZARDOUS INGREDIENTS

Note: Products under normal conditions do not represent an inhalation, ingestion or contact health hazard.

MATERIAL OR COMPONENT	CAS NUMBER	WT%	EXPOSURE LIMITS	
			OSHA PEL (Mg/M3)	ACGIH TLV(MG/M3)
<b>Cobalt</b>	<b>7440-48-4</b>	<b>99.8%</b>	<b>0.05mg/m<sup>3</sup></b>	<b>0.1mg/m<sup>3</sup></b>

### Section 3- PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS) <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Gas <input type="checkbox"/> Other	APPEARANCE AND ODOR <b>Metallic gray powder or pieces. Odorless</b>
MELTING POINT (BASE METAL) <b>1495° C</b>	SPECIFIC GRAVITY <b>8.92gm/cc</b>

### Section 4- FIRE AND EXPLOSION

Flash Point (Method Used) <b>N/A</b>	Flammable Limits <b>N/A</b>	LEL <b>N.A.</b>	UEL <b>N.A.</b>
EXTINGUISHING MEDIA <b>Use agents for metal fires such as dry powder (graphite), CO2, or foam.</b>			
SPECIAL FIRED FIGHTING PROCEDURES <b>Wear full face, self-contained breathing apparatus with full protective clothing</b>			
UNUSUAL FIRE AND EXPLOSION HAZARDS <b>Extremely fine powder (3 microns or smaller) is combustible. Larger sized cobalt powder does not present a fire or explosion hazard. May generate toxic fumes.</b>			

### Section 5- REACTIVITY DATA

STABILITY <b>Stable</b>	INCOMPATIBILITY (MATERIALS TO AVOID) <b>Hydrazinium nitrate, bromine pentafluoride, strong acids, oxidizers and acetylene.</b>
CONDITIONS TO AVOID <b>None Known</b>	
HAZARDOUS DECOMPOSITION PRODUCTS <b>None Known</b>	

## Section 6- HEALTH HAZARD GUIDE

MAJOR EXPOSURE HAZARD

**Inhalation**  **Skin**  **Skin Absorption**  **Eye Contact**  **Ingestion**

EFFECTS OF OVEREXPOSURE

**INHALATION:** Prolonged inhalation of cobalt dust, fumes or mist may cause serious respiratory illness. There are references in literature associating cobalt with interstitial fibrosis, a disease that can be fatal. Inhalation may cause an irritation of the respiratory organs of sensitive persons resulting in obstruction of airways.

**DERMAL/SKIN CONTACT:** May cause irritation. Single prolonged contact is essentially non-irritating. Repeated exposure may cause allergic dermatitis, usually occurring in the skin areas of friction. May cause cross sensitivity to Chromium and Nickel.

**OTHER:** Amounts of ingested incidental to industrial handling are not likely to cause injury. Single dose oral toxicity is low. Ingestion of significant amounts of cobalt has been reported to have potential for causing blood, hear, thyroid and pancreatic damage.

EMERGENCY & FIRST AID PROCEDURES

**INGESTION:** Induce vomiting if large amounts are ingested.

**INHALATION:** Remove from exposed area to fresh air immediately; keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

**SKIN CONTACT:** Remove contaminated clothing. Wash affected area with soap or mild detergent and large amounts of water.

**EYE CONTACT:** Flush eyes with lukewarm water lifting up the upper and lower lids for at least fifteen minutes. If irritation persists, seek medical attention.

## Section 7- SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES

**Wear appropriate respiratory and protective equipment to prevent skin contact.**

**Collect spill by wet sweeping, dry sweeping with a sweeping compound, or vacuuming using a vacuum with a HEPA filter. Take care not to raise dust.**

WASTE DISPOSAL METHODS

**Observe all federal, state and local regulations when storing or disposing.**

## Section 8- SPECIAL PROTECTION

RESPIRATORY:

**NIOSH approved dust-mist-fume respirator is required.**

VENTILATION

**Local exhaust: Maintain exposure below the PEL & TLV.**

**Mechanical: Adequate ventilation**

EYE PROTECTION & PROTECTIVE CLOTHING

**Neoprene gloves, synthetic apron, safety shower and eye wash. Safety glasses required.**

## Section 9- SPECIAL PRECAUTIONS

**Keep material in closed containers. Do not store near mineral acids. Use good house-cleaning practices to prevent accumulation of dust and follow cleaning procedures (vacuuming & wet sweeping) that will keep airborne particulate at a minimum. Avoid breathing dust. Wash thoroughly after handling.**

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