



## Material Safety Data Sheet

**Product No. 29-27, 9570 Cobalt Products**

**Issue Date (11-22-06)**

**Review Date (05-03-12)**

### Section 1: Product and Company Identification

**Product Name: Cobalt Products**

Synonym:

**Company Name**

**Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477**

**Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)**

**International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)**

**Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.**

### Section 2: Composition / Information on Ingredients

<b>Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)</b>	<b>%</b>	<b>OSHA PEL mg/m<sup>3</sup></b>	<b>ACGIH TLV mg/m<sup>3</sup></b>	<b>NTP</b>	<b>IARC</b>	<b>OSHA regulated</b>
Cobalt (7440-48-4)	99.8	0.05	0.1	ND	2B	Yes

NIOSH Immediately Dangerous To Life or Health Concentration (IDLH): 20 mg/m<sup>3</sup> (as dust or flume).

### Section 3: Hazard Identification

#### Emergency overview

Appearance: Metallic grey, pieces, wire, disc or powder.

Immediate effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

#### Potential health effects

Primary Routes of entry: Eye contact. Inhalation. Ingestion.

Signs and Symptoms of Overexposure: 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.

Eyes: May cause irritation.

Skin: 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.

Ingestion: 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, heart, thyroid and pancreatic damage.

Inhalation: Inhalation may cause an irritation of the respiratory organs of sensitive persons resulting in obstruction of airways.

Chronic Exposure: Prolonged inhalation of cobalt dust, fumes or mist may cause serious respiratory illness.

Chemical Listed As Carcinogen Or Potential Carcinogen: Classified A3 (Proven for animal.) by ACGIH. Cobalt is an OSHA Select carcinogen. NTP Report on Carcinogens lists only cobalt sulfate as "Reasonably anticipated to be a human carcinogen".

See Toxicological Information (Section 11)

**Potential environmental effects**

See Ecological Information (Section 12)

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**Section 4: First Aid Measures**

**If accidental overexposure is suspected**

Eye(s) Contact: Flush eyes with lukewarm water lifting up the upper and lower lids for at least fifteen minutes. If irritation persists, seek medical attention.

Skin Contact: Remove contaminated clothing. Wash affected area with soap or mild detergent and large amounts of water.

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

Ingestion: Induce vomiting if large amounts are ingested.

**Note to physician**

Treatment: ND

Medical Conditions generally Aggravated by Exposure: ND

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**Section 5: Fire Fighting Measures**

Flash Point: ND

Flammable Limits: ND

Auto-ignition point: ND

Fire Extinguishing Media: Small Fire: Use dry chemical powder. Large Fire: Use water spray or fog.

Special Fire Fighting Procedures: ND

Unusual Fire and Explosion Hazards: 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.

Hazardous combustion products: Toxic metal oxide fume.

DOT Class: Powder form: flammable.

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**Section 6: Accidental Release Measures**

Steps to be Taken in Case Material is Released or Spilled: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Powder form: Flammable solid.

Do not touch spilled material. Be sure to use an approved/certified respirator or equivalent. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV.

Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

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### **Section 7: Handling and Storage**

Precautions to be Taken in Handling and Storage: 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.

Storage temperature: Room Temperature.

Storage Pressure: NA

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### **Section 8: Exposure Controls / Personal Protection**

#### **Engineering Controls**

Ventilation required: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

#### **Personal Protection Equipment**

Respiratory protection: Dust respirator. Be sure to use an approved/certified respirator or equivalent.

Protective gloves: Gloves.

Skin protection: Lab coat.

Eye protection: Splash goggles.

Additional clothing and/or equipment: Eye wash station or shower.

#### **Exposure Guidelines**

See Composition/Information on Ingredients (Section2)

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### **Section 9 Physical and Chemical Properties**

Appearance and Physical State: Metallic grey powder, pieces, wire, disc. Solid.

Odor (threshold): NA

Specific Gravity (H<sub>2</sub>O=1): 8.92 g/cc

Vapor Pressure (mm Hg): ND

Vapor Density (air=1): ND

Percent Volatile by volume: ND

Evaporation Rate (butyl acetate=1): ND

Boiling Point: 3100°C (5612°F)

Freezing point / melting point: 1493°C (2719.4°F)

pH: NA

Solubility in Water: Insoluble in cold water

Molecular Weight: 58.93 g/mole

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### **Section 10: Stability and Reactivity**

Stability: Stable

Conditions to Avoid: ND

Materials to Avoid (Incompatibility): Hydrazinium nitrate, bromine pentafluoride, strong acids, oxidizers and acetylene.

Hazardous Decomposition Products: Toxic metal oxide fume.

Hazardous Polymerization: Will not occur.

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### **Section 11: Toxicological Information**

Results of component toxicity test performed: ORAL (LD50): Acute: 6170 mg/kg [Rat].  
Human experience: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

This product **does** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

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### **Section 12: Ecological Information**

Ecological Information: The products of degradation are as toxic as the original product.

Chemical Fate Information: ND

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### **Section 13 Disposal Considerations**

RCRA 40 CFR 261 Classification: ND. Consider recycle of material.

Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

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### **Section 14: Transportation Information**

**Solid forms: Not regulated.**

**For Powders only:**

US DOT Information: Proper shipping name: Metal powder, Flammable, n.o.s. (Cobalt metal, powder).

Hazard Class: 4.1

Packaging group: III

UN Number: UN3089

Limitations:

IATA: Proper shipping name: Metal powder, Flammable, n.o.s. (Cobalt metal, powder).

Hazard Class: 4.1

Packing group: III

UN Number: UN3089

Limitations: Powder only

Domestic shipments only: ND

IMO: Proper shipping name: Metal powder, Flammable, n.o.s. (Cobalt metal, powder).

Class: 4.1

UN Number: UN3089

Packing group: III

Marine Pollutant: No

Canadian TDG: Metal powder, Flammable, n.o.s. (Cobalt metal, powder).

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### **Section 15: Regulatory Information**

**United States Federal Regulations**

MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.

SARA: ND

SARA Title III: ND

RCRA: ND

TSCA: Cobalt (7440-48-4) is listed on the TSCA inventory.

CERCLA: No

### **State Regulations**

California Proposition 65: Warning! This product contains the chemical(s) for which the State of California has found to cause cancer. Listed as Cobalt metal powder (7440-48-4)

### **International Regulations**

Canada WHMIS: CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

Europe EINECS Numbers: 231-158-0

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### **Section 16: Other Information**

Label Information: Powder form: Flammable, Toxic.

European Risk and Safety Phrases: R36/38- Irritating to eyes and skin. R40- Possible risks of irreversible effects.

European symbols needed: ND

Canadian WHMIS Symbols: D-2A

HMIS® Hazard Rating: Health: **2**; Fire: **1**; Reactivity: **0**; Personal Protection: E, (Metal Powders)

NFPA Hazard Rating: Health: **2**; Fire: **1**; Reactivity: **0**; Personal Protection: E, (Metal Powders)

(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

### **Abbreviations used in this document**

NE= Not established

NA= Not applicable

NIF= No Information Found

ND= No Data

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### **Disclaimer**

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.