



TALLADIUM, INC.
SAFETY DATA SHEET

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Section 1 - Product and Company Identification

Issue Date: 4/01/2014

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Product Identification: Milling Tools

Product Synonym: Cemented Tungsten Carbide Rotary Cutting Tools with cobalt binder

Product Class/Use: All Talladium Milling Tools

Company Name: Talladium, Incorporated

Company Address: 27360 West Muirfield Lane
Valencia, California 91355

United States of America

General Information Telephone: (661)-295-0900

Emergency Telephone: Not required by regulations.

Section 2 - Composition/Information on Ingredients

Substance:	C.A.S	% Range by Weight	OSHA PEL (mg/m ³)	ACGIH TLV (mg/m ³)
Tungsten carbide (limits for tungsten dust)	12070-12-1	50 - 97%	<i>not established</i>	<i>not established</i>
Tantalum carbide (limits for tantalum dust)	12070-06-3	0 - 15%	<i>not established</i>	<i>not established</i>
Cobalt	7440-48-4	3 - 30%	0.1 mg/m ³	0.02 mg/m ³
Chromium carbide (limits for chromium (+3) compounds as Cr)	7440-47-3	0 - 1%	0.5 mg/m ³	0.5 mg/m ³

Section 3 - Hazards Identification, Including Emergency Overview

Grinding or heating cemented tungsten carbide product will produce dusts or fumes of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with the skin or eyes.

Acute (short term) effects of overexposure:

Inhalation: Dust or fumes from grinding or heating this product can cause irritation of the nose, mouth and throat when inhaled. High levels of cobalt may cause irritation of the lungs resulting in fluid build-up (Pulmonary edema). This reaction may be delayed for up to two days and may be fatal. Symptoms of overexposure include productive cough, wheezing shortness of breath, and chest tightness.

Skin: Contact with this product may cause irritation and skin rash. Dry skin conditions may be aggravated by exposure.

Eyes: Contact with this product may cause eye irritation.

Ingestion: There is no information available regarding ingestion that may have occurred in the tungsten carbide industry. Reports outside of the industry suggest that ingestion of significant amounts of cobalt has the potential for causing blood, heart and other organ problems.

Chronic (long term) effects of overexposure:

Inhalation: Occupational asthma and interstitial fibrosis (lung scarring) may develop due to inhalation of dust or fumes. The asthma may develop due to sensitization to cobalt. These conditions may lead to permanent disability or death. Symptoms are as described in acute effects. Cobalt can cause damage to the heart muscle resulting in heart failure. Cobalt can also cause damage to the thyroid and liver.

Skin: Contact with this product may cause irritation and skin rash. Contact dermatitis may develop as a result of sensitization to cobalt.

Eyes: Contact with this product may cause eye irritation and/or conjunctivitis.



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Section 4 - First Aid Measures

Inhalation: Remove to fresh air if coughing, wheezing, shortness of breath or any difficulty of breathing occurs. Seek medical attention.

Skin: If contact occurs, wash skin thoroughly with soap and water. If irritation or rash develops, seek medical attention.

Eyes: Flush eyes immediately with water for 15 minutes. If irritation develops, seek medical attention.

Ingestion: If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

Section 5 - Fire Fighting Measures

Hard cemented tungsten carbide product is not a fire hazard. However, the dust produced from grinding may be flammable and may pose a fire hazard if allowed to accumulate.

Flash Point/ Method: None

Extinguishing Media: For powder fires, use dry sand, dry dolomite, or graphite powder.

Special Fire Fighting Procedures: Self-contained breathing equipment should be used by all fire fighting personnel.

Unusual Fire or Explosion Hazards: Dusts from grinding, particle size and dispersion may be spontaneously combustible or explosive.

Section 6 - Accidental Release Measures

Spill Release Procedures: Avoid generating dust by using a vacuum cleaner equipped with a High Efficiency Particulate Absolute (HEPA) filter to prevent airborne dust levels which exceed the PEL or TLV, wet dust mop or wet clean up. If airborne dust is generated, wear an appropriate NIOSH approved respirator.

Waste Disposal: Dispose in accordance with Local, State and Federal Regulations. May be recycled.

Section 7 - Handling and Storage

Handling and Storage Precautions: Use with adequate ventilation. Do not allow dust to collect on ledges, floors or machinery. Store in the original container.

Section 8 - Exposure Controls & Personal Protection

Use an appropriate NIOSH approved respirator if airborne dust concentrations exceed the appropriate PEL or TLV. All appropriate requirements as set forth in 29 CFR 1910.134 should be met. Protection factors for respirators recommended below are based upon those as listed in 29 DFR 1910.1001 (g), Table 1. The following type respirators should be used at a minimum:

Up to 0.5 mg/m³ (Co) a half mask air purifying respirator with a dust/mist/fume or high efficiency filter.

Up to 2.5 mg/m³ (Co) a full face piece air purifying respirator with a high efficiency filter.

Up to 5 mg/m³ (Co) a full face piece powered air purifying respirator with a high efficiency filter.

Up to 20 mg/m³ (Co) a supplied air respirator with full face piece operated in positive pressure mode.

Above 20 mg/m³ (Co) or unknown a self-contained breathing equipment operated in positive pressure mode or a supplied air respirator with full face piece operated in positive pressure mode with auxiliary self-contained air supply.

Respiratory: Use adequate ventilation and vacuum system and NIOSH approved mask.

Eye Protection: Wear safety glasses with side shields or face shield.



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Skin Protection: Protective gloves

Section 9 - Physical & Chemical Properties

Boiling Point: N/A

Solubility in Water: Insoluble

Specific Gravity: (H₂O=1): 11.0 – 15.5

Appearance: Dark gray metal

Odor: Odorless

Section 10 - Stability & Reactivity Data

Stability: Stable under normal conditions

Incompatibility: Oxidizers, contact of dust with oxidizers may cause fire or explosions. Strong acids, this product may react violently with strong acids. Contact with the following materials may cause violent reactions: Hydrazinium nitrate, Hydrazine, Ammonia, Lead oxide, Fluoride, Chlorine trifluoride, Iodine pentafluoride, Nitrogen dioxide, Nitrous Oxide.

Hazardous Decomposition Products: Toxic metal fumes may be released in a fire.

Hazardous Polymerization: Not expected to occur.

Section 11 - Toxicological Information

Information on toxicological effects:

Acute toxicity: For Tungsten carbide, Tantalum carbide, & Chromium - no data available.

For Cobalt, LD50 Oral – rat – 6.171 mg/kg. Behavioral: Somnolence (general depressed activity), Ataxia, Diarrhoea.

Skin corrosion/irritation: No data available

Serious eye damage/eye irritation: No data available

Respiratory or skin sensitization: For Tungsten carbide, Tantalum carbide, & Chromium - no data available.

For Cobalt, may cause allergic respiratory reaction.

Germ cell mutagenicity: For Tantalum carbide, Chromium & Cobalt - no data available.

For Tungsten carbide genotoxicity in vitro – Human – leukocyte, Micronucleus test and DNA damage.

Carcinogenicity:

IARC: For Tungsten carbide and Tantalum carbide – No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.

For Cobalt – This product contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 2B – Group 2B: Possibly carcinogenic to humans (Cobalt)

2A – Group 2A: Possibly carcinogenic to humans (Cobalt)

2B – Group 2B: Possibly carcinogenic to humans (Cobalt)

For Chromium –

Carcinogenicity: Rabbit – (Implant)

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Musculoskeletal: Tumors.

Carcinogenicity: Rat – (Implant)

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Blood: Lymphomas including Hodgkin's disease. Tumorigenic: Tumors at site or application.

Carcinogenicity: Rat – (Intravenous)

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Gastrointestinal: Tumors
Blood: Lymphomas including Hodgkin's disease.

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.



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IARC: 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Chromium)

Reproductive toxicity: No data available

Specific target organ toxicity (single exposure): No data available

Specific target organ toxicity (repeated exposure): No data available

Aspiration hazard: No data available

Potential health effects:

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion: May be harmful if swallowed.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Signs and symptoms of exposure:

For Tungsten carbide, Tantalum carbide & Chromium - to the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

For Cobalt – Kidney injury may occur, damage to the eyes, lung irritation, throat, rash, vomiting, diarrhea

Additional Information:

Tungsten carbide – RTECS: YO7250000

Tantalum carbide – RTECS: Not available

Cobalt – RTECS: GF9750000

Chromium – RTECS: GB4200000

Section 12 - Ecological Information

Toxicity: Very toxic to aquatic life.

Section 13 - Disposal Considerations

Waste Disposal Methods: Follow all Federal, State, and Local regulations.

Section 14 - SDS Transport Information

U.S. DOT Information: Not regulated.

Section 15 - Regulatory Information

Federal Regulatory Information: No data available

Section 16 - Other Information

The information and recommendations above are believed to be accurate and represent the best information currently available to us. The person receiving the above material should make their own determination as to the suitability for their use. Talladium makes no warranty expressed, or implied with respect to this information and assumes no liability resulting from its use.