

# Safety Data Sheet

Spec Tool Co.

Cemented Carbide with Cobalt Binder



## 1. Product and Company Identification

Product Name: Cemented Carbide with Cobalt Binder. (All Spec Tool Tungsten Carbide Grades).  
Trade Name, Synonyms: Tungsten Carbide.  
Chemical Family: Refractory Metal Carbide.  
Primary Use: Abrasive material used on metals, concrete, masonry and building materials.

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## 2. Hazard Identification



### Warning

Use only with adequate ventilation. Harmful if inhaled. Exposure to dust, powder, or fumes can cause eye, skin, and respiratory tract irritation. Dust or powder can cause Respiratory system damage. Keep containers containing powder closed. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

## 3. Composition/ Information on Ingredients

Substance	CAS-No.	Percentage by Weight	OSHA PEL	ACGIH TLV
Tungsten Carbide (limits for Tungsten Dust)	12070-12-1	65-97% *	--- ---	5 mg/m <sup>3</sup>
Cobalt	7440-48-4	2.0-25% *	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>
Tantalum Carbide (limits for Tantalum Dust)	12070-06-3	0.0-50% *	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Titanium Carbide (limits for Titanium Dust)	12070-08-5	0.0-25% *	No limit established at present	
Niobium Carbide	12069-94-2	0.0-25% *	No limit established at present	

\* Depending on grade specification

## 4. First Aid Measures

General Information	Workplace hygiene: No eating, no drinking, no smoking in the working area. Thoroughly wash your hands before eating, drinking or smoking.
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In Case of Inhalation	In case of inhalation of dust, move affected person into fresh air. Give artificial respiration in case of respiratory arrest. If there is difficulty in breathing, oxygen is to be given, exclusively by medical staff. Call a physician immediately.
In Case of Skin Contact	Flush with plenty of water using mild cleaning agent. Consult a physician if the skin irritation persists.
In Case of Eye Contact	In case of eye irritation, rinse with plenty of water. Consult a physician if the irritation persists.
In Case of Ingestion	If major quantity of dust is swallowed, dilute with plenty of water; induce vomiting, and consult a physician.

### 5. Fire Fighting Measures

Suitable extinguishing media	Dry chemicals, CO <sub>2</sub> , foam or water. Do not allow the material to enter drains/ surface water/ ground-water.
Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases	Carbide blanks and/or carbide products are no fire hazard. The dust produced by grinding, however, can be flammable and carry the danger of fire, if accumulated.
Special protective equipment for fire-fighters	Firefighters should wear approved SCBA and full turn-out gear.

### 6. Accidental Release Measures

Cleanup using methods which avoid dust generation. Such methods include, vacuum (with appropriate filter to prevent airborne dust levels which exceed PEL or TLV), wet dust mop, or wet cleanup. If airborne dust is generated, use and appropriate NIOSH approved respirator.

Wash hands thoroughly after handling, before eating or smoking. Wash exposed skin at the end of work shift. Do not shake clothing, rags, or other items to remove dust. Dust should be removed by washing or vacuuming (with appropriate filters) the clothing rags or other items.

Periodic medical examinations are recommended for individuals regularly exposed to dust or mist.

### 7. Handling and Storage

**Recommended Work Practices:** Use only with adequate ventilation. Avoid breathing dust. Wash thoroughly after handling and use, especially before eating, drinking or smoking. Consider potential exposure to components of the base materials or coatings being machined. Refer to OSHA's substance specific standards for additional work practice requirements where applicable.

Dust generated during machining or processing may spontaneously combust or create a fire or dust explosion hazard. Use good housekeeping to prevent the accumulation of dusts around the workplace.

**Storage:** Store in a dry location.

## 8. Exposure Controls/Personal Protection

**Routes of Exposure:** grinding cemented carbide product will produce dust of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with skin or eyes

**Ventilation:** Use local exhaust or general ventilation as required to minimize exposure to dust and maintain the concentration of contaminants below the TLVs.

**Respiratory Protection:** Use NIOSH approved respirator if exposure limits are exceeded or where dust exposures are excessive. Consider the potential for exposure to components of the coatings or base material being brushed or machined in selecting proper respiratory protection. Refer to OSHA's specific standards for lead, cadmium, etc. where appropriate. Selection of respiratory protection depends on the contaminant type, form and concentration. Select and use respirators in accordance with OSHA 1910.134 and good industrial hygiene practice.

**Gloves:** Avoid skin contact with dust. Follow facility requirements regarding gloves use to avoid safety hazard.

**Eye Protection:** Safety goggles or safety glasses with side shields should be used.

**Other:** Protective clothing as needed to prevent contamination of personal clothing. Hearing protection may be required.

## 9. Physical & Chemical Properties

Appearance:	Dark Gray Metal	Solubility in Water:	Insoluble
Odor:	No Odor	Specific Gravity:	11.0 to 15.5
Boiling point:	N/A	Percent Volatile by Volume:	0
Vapor Pressure:	N/A	Evaporation Rate:	N/A
Vapor Density:	N/A	How Best Monitored:	Air Sample
PH Value:	N/A	Flash Point:	N/A

## 10. Stability & Reactivity

**Stability:** Stable

**Incompatibility:** Contact of dust with strong oxidizers may cause fire or explosion

**Hazardous Decomposition Products:** None

**Hazardous Polymerization:** Will not occur

**Conditions to Avoid:** N/A

**Materials to Avoid:** Strong Acids

## 11. Toxicological Properties

### HEALTH HAZARDS:

**Ingestion:** None expected under normal use conditions. Swallowing large pieces may cause obstruction of the gastrointestinal tract.

**Inhalation:** Dust may cause respiratory irritation.

**Eye:** Dust may cause eye irritation. Dust particles or filings may cause abrasive injury to the eyes.

**Skin:** None expected under normal use conditions. Rubbing blades across the skin may cause mechanical irritation or abrasions.

**Sensitization:** Chromium and nickel can cause skin and/or respiratory sensitization.

**Chronic:** Long-term overexposure to dust may cause lung damage (fibrosis) with symptoms of coughing, shortness of breath and diminished breathing capacity. Skin and/or respiratory sensitization may also occur. Chronic effects may be aggravated by smoking. Prolonged exposure to elevated noise levels during operations may affect hearing. A greater hazard, in most cases, is the exposure to the dust/fumes from the material or paint/coatings being machined. Most of the dust generated during machining is from the base material being processed and the potential hazard from this exposure must be evaluated.

**Carcinogenicity:** Nickel is listed as a Category 2B Possible human carcinogen by IARC and a Reasonably Anticipated to be a Human Carcinogen by NTP. None of the other components is listed as a carcinogen or potential carcinogen by OSHA, NTP, ACGIH, or IARC.

**Medical Conditions Aggravated by Exposure:** Employees with pre-existing respiratory disease may be at risk from exposure.

**Acute Toxicity Values:**

This product and its components are not acutely toxic.

Cobalt: Oral rat LD50 – 6171 mg/kg

## 12. Ecological Information

No ecological data is available for this product. Dust generated may be hazardous to the environment.

## 13. Disposal Considerations

Dispose in accordance with all applicable local, state/provincial and federal regulations. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

## 14. Transport Information

**DOT Hazardous Materials Description:**

Proper Shipping Name: Not Regulated

UN Number: None

Hazard Class/Packing Group: None

Labels Required: None

## 15. Regulatory Information

**SARA Section 311/312 Hazard Categories:** Not Applicable in solid form. Dust generated from machining – Acute Health and Chronic Health

**SARA Section 313:** This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372 (Toxic Chemical Release Reporting):

Nickel	7440-02-0	30% max
Chromium	7440-47-3	5% max.

**California Proposition 65:** WARNING You create dust when you machine materials such as metal. This dust often contains chemicals known to cause cancer, birth defects or other reproductive harm.

**Canadian WHMIS Classification:** Not a controlled product. This product meets the definition of a "manufactured article" under the WHMIS regulations. This product has been classified under the CPR and this SDS discloses information elements required by the CPR.

## 16. Other Information

**NFPA Hazard Rating:**



**Health:** 1

**Fire:** 0

**Reactivity:** 0

**Date Prepared:** 25 January 2013

**Prepared By:** Samuel Peterson, EH&S Manager

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