

MATERIAL SAFETY DATA SHEET

Section I- Product Identification

CHEMICAL NAME: Cemented Carbide Product with Cobalt binder
TRADE NAME AND SYNONYMS: All Carbide Grades
CHEMICAL FAMILY: Refractory Metal Carbide

3 HEALTH HAZARD
0 FLAMMABILITY HAZARD
0 REACTIVITY HAZARD

MOLECULAR WEIGHT: N/A

NFPA 704 Identification
Information

Section II- Hazardous Ingredients

Material	CAS Number	Percent By Weight	OSHA PEL	ACGIH TLV
Tungsten Carbide (limits for Tungsten dust)	12070-12-1	80-97% *	---	5mg/m3
Cobalt	7440-48-4	3-20% *	0.10 mg/m3	0.02 mg/m3
Tantalum Carbide (limits for Tantalum dust)	12070-06-3	0-15% *	5 mg/m3	5mg/m3
Vanadium Carbide (limits for Vanadium dust)	11130-21-5	0.1-2% *	0.5 mg/m3	0.5 mg/m3

Our carbide product contains between 3.0% and 20.0% cobalt (Chemical Abstract Service (CAS) Number 7440-48-4) which is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments of the Reauthorization Act of 1986 40 CFR 372.

*Depends on grade specifications

Section III- Physical Data

Appearance and Odor: Dark and Gray Metal/No Odor

Boiling Point: N/A

Vapor Pressure (mm Hg): N/A

Vapor Density (Air =1): N/A

Solubility in Water: Insoluble

Specific Gravity (H20): 11.0 to 15.5

Percent Volatile by Volume: 0

Evaporation Rate: N/A

How Best Monitored: Air Sample

Section IV- Health Hazard Data

Grinding cemented carbide product will produce dust of potentially hazardous ingredients that can be inhaled, swallowed or come in contact with the skin or eyes.

A) Primary Routes of Exposure

1) Inhalation

a) Effects on Overexposure: Dust from grinding can cause irritation of the nose and throat. It also has the potential for causing transient or permanent respiratory disease, including occupational asthma and interstitial fibrosis, in a small percentage of exposed individuals. It is reported that cobalt dust is the most probable cause of such respiratory diseases. Symptoms include productive cough, wheezing, and shortness of breath, chest tightness and weight loss. Interstitial fibrosis (lung scarring) can lead to permanent disability or death. Certain pulmonary conditions may be aggravated by exposure.

b) Emergency First Aid (Applicable for dusts or mists): If symptoms of pulmonary involvement (coughing, wheezing, shortness of breath, etc.,) develop, remove from exposure and seek medical attention.

2) Skin Contact

a) Effects on Overexposure: Can cause irritation or an allergic skin rash due to cobalt sensitization. Certain skin conditions, such as dry skin, may be aggravated by exposure.

b) Emergency First Aid (Applicable for dusts or mists): If irritation or rash occurs, thoroughly wash affected areas with soap and water and isolate.

from exposure. If irritation or rash persists, see medical attention.

3) Eye Contact

a) **Effects on Overexposure:** Can cause irritation.

b) **Emergency First Aid (Applicable for dusts or mists):** If irritation occurs, flush with copious amounts of water. If irritation persists, seek medical attention.

4) Ingestion

a) **Effects on Overexposure:** Reports outside the industry suggest that ingestion of significant amounts of cobalt has the potential for causing blood, heart and other organ problems.

b) **Emergency First Aid (Applicable for dusts or mists):** If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

CARCINOGENIC ASSESSMENT (NTP Annual Report, IARC Monographs, other): None of the components of this material have been identified as known or suspected carcinogens by NTP, IARC, or OSHA

Section V- Fire and Explosion Hazard Data

Flash Point: N/A **Test Method Used:** -- -- **Flammable Limits:** N/A **LEL:** -- -- **UEL:** -- --

Hard Cemented Carbide Product is not a fire hazard. Dusts generate in grinding operations may ignite if allowed to accumulate and subjected to an ignition source.

Extinguishing Media: For powder fires smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water.

Special Fire Fighting Procedures: For a powder fire is confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire, fire fighters should use self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Dusts may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

NFPA 704 SYSTEM OF IDENTIFICATION

The following information is provided to you in order to enable a fire fighter to determine what he must do in order to protect himself from injury while fighting a fire in an area containing the products described in this MSDS. It is not intended to provide full protective information for normal users of these products. Such protective information is more fully set out elsewhere in this MSGS and should be read carefully.

Health Hazard-----rating 3

Flammability Hazard-----rating 0

Reactivity Hazard-----rating 0

Section VI- Reactivity Data

Stability: Unstable

Stable X

Conditions to Avoid: N/A

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

Materials to Avoid: Strong Acids

Hazardous Decomposition Products: None

Hazardous Polymerization: May Occur

Conditions to Avoid: N/A

Will Not Occur X

Section VII- Spill or Leak Procedures

Steps to be taken in Case Material is released or spilled: Ventilate area of spill. Clean up, using methods to avoid dust generation, such as vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

Waste Disposal Method: Dispose of in accordance with appropriate government regulations. May be sold as scrap for reclaim.

Section VIII- Special Protection Information

Respiratory Protection: Use an appropriate NIOSH approved respirator if airborne dust concentration exceeds the appropriate PEL or TLV. All appropriate requirements set forth in 29 CFR 1910.134 should be met

Ventilation: Use local exhaust ventilation that is adequate to limit personal exposure to airborne dust to levels that do not exceed the PEL or TLV. If such equipment is not available, use respirators as specified above.

Protective Gloves: Protective Gloves or Barrier cream are recommended when contact with dust or mist is likely. Prior to applying the Barrier cream or use of protective gloves, wash thoroughly.

Eye Protection: Safety glasses with side shields or goggles should be worn.

Other Protective Equipment: Make sure tool is properly seated and safely clamped or held in place according to approved procedures. Always use machine guards and wear safety glasses and protective clothing to prevent injury in the event of tool breakage.

Section IX- Special Precautions

Precautions to be Taken in Handling and Storage: Maintain good housekeeping procedures to prevent dust accumulation during grinding. Avoid dust inhalation and direct skin contact with dust.

Do not strike or impact product with hardened steel hammer or similar device because of possible fracture/shattering of product. Product should be pressed if inserted into another metal part or product.

Other Precautions: Clean up, using methods to avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or wet clean up. If airborne dust is generated, use an appropriate NIOSH approved respirator. Wash hands thoroughly after handling and before eating and smoking. Wash exposed skin at the end of the 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.

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