



Safety Data Sheet

Revision Date 05/22/2015

Supersedes: 01/05/2009

Section 1: Identification

Product Name / Identifier: Cemented Carbide Product with Cobalt Binder and Brazed Tools.
Chemical Name: Cemented Carbide Product with Cobalt Binder; or Cemented Carbide Product Brazed Tools using Brazing Filler Metal.
Chemical Family: Refractory Metal Carbide. Molecular Weight: N/A
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Section 2: Hazard Identification

Primary Routes of Entry:

- Inhalation
- Skin Contact.

During routine operations and use, cemented carbide products do not present inhalation, ingestion, skin contact or other chemical hazards.

Hazard Statement: Dust from operations such as grinding and cutting may release dusts which can cause irritation of the nose and throat.

Inhalation: May cause shortness of breath, dyspnea, asthma, wheezing, coughing, soreness of chest and in severe cases can cause interstitial fibrosis (scarring of the lungs) that can lead to permanent disability or death.

Skin Contact: May cause irritation or allergic skin rash, possibly due to sensitization (primarily from Cobalt) in previously exposed individuals, symptomized by Dermatitis, eczema and itching occurring predominately in the flexor areas of the elbow, neck and face.

Eye Contact: May cause irritation, redness, pain, itching or conjunctivitis.

Ingestion: Reports outside the industry suggest the ingestion of significant amounts of Cobalt can cause blood, heart and other organ problems.

Section 3: Composition / Information of Ingredients

MATERIAL	% BY WEIGHT	OSHA TLV / TWA(A)	ACGIH TLV
TUNGSTEN CARBIDE (12070-12-1) <i>Limits for Tungsten Dust</i> (7440-33-7)			
As Respirable Fraction of Nuisance Dust	41 – 97%	5mg/m3 (as W)	5mg/m3
*COBALT (7440-48-4)	3 – 30%	0.05mg/m3	0.05mg/m3
TANTALUM CARBIDE (12070-06-3) <i>Limits for Tantalum Dust</i> (7440-25-7)	0 – 52%	5mg/m3	5mg/m3
TITANIUM CARBIDE (12070-08-5) <i>Limits for TiO2</i> (13463-67-7)	0 – 15%	10mg/m3	10mg/m3
*VANADIUM CARBIDE (12070-10-9) <i>Limits for V2O5</i> (1314-62-1)	0 – 0.50%	0.05mg/m3 (ceiling)	0.05mg/m3
ALUMINUM OXIDE COATING (1344-28-1)	0 – 0.50%	5mg/m3	10mg/m3
TITANIUM CARBIDE COATING (12070-08-4) <i>Limits for TiO2</i> (13463-67-7)	0 – 0.50%	10mg/m3	10mg/m3
TITANIUM NITRIDE COATING (25583-20-4) <i>Limits for TiO2</i> (13463-67-7)	0 – 0.50%	10mg/m3	10mg/m3
*SILVER (7440-22-4)	50.0 %	0.01mg/m3	0.1mg/m3
*COPPER DUST (7440-50-8)	15.5 %	1mg/m3	1mg/m3
*ZINC DUST (as Zn Oxide) (7440-66-6)	15.5 %	5mg/m3	5mg/m3

Section 4: First Aid Measures

Inhalation: If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.), remove from exposure area to fresh air immediately. Keep the affected person warm and at rest. If breathing has stopped, perform artificial respiration, seek medical attention immediately.

Skin Contact: If irritation or rash occurs, remove contaminated apparel, thoroughly wash affected area with soap and water and isolate from exposure. If irritation or rash persists, seek medical attention.

Eye Contact: If irritation occurs, flush with copious amount of water; assist cleansing by intermittently lifting upper and lower eyelids until no foreign material remains. Seek medical attention immediately.

Ingestion: If substantial quantities are swallowed and person is conscious, dilute with a large amount of water, induce vomiting. If person is unconscious, DO NOT induce vomiting. Seek medical attention immediately.

Section 5: Fire Fighting Measures

Flash Point: N/A

Test Method: N/A

Flammable Limits: N/A

LEL: N/A

UEL: N/A

Hard Cemented Carbide Product is not a fire hazard. Tungsten Carbide Product powder and dust generated in hard metal grinding operations is expected to be a fire and explosive hazard if allowed to accumulate and subjected to high temperatures or ignition sources. Tungsten Carbide Product (except as powder and dust) is not expected to present a fire or explosion hazard under normal handling conditions.

Extinguishing Media: For powder fires use ABC type fire extinguishers, water, sodium chloride, soda ash, dry sand or dry dolomite.

Special Fire Fighting Procedures: For a powder fire confined to a container or small area, cool containers exposed to flame with water until fire is out; use a respirator approved for toxic dusts and fumes. For large fires, fire fighters should use self-contained breathing apparatus and consider use of unmanned hose holder or monitor nozzles, or let fire burn and control.

Avoid breathing fumes from burning materials.

Unusual Fire and Explosion Hazard: Powder and dust 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 conditions.

Section 6: Accidental Release Measures

Steps to be taken in case material is released or spilled: Ventilate area of spill. Clean up using methods which avoid dust generation such as a "High Efficiency Particulate Air" (HEPA) vacuum, wet dust mop or wet cleanup. If airborne dust is generated, use an appropriate NIOSH/MSHA approved respirator.

Waste Disposal Methods: Tungsten Carbide Product is a valuable material that may be sold as scrap for reclamation purposes. If reclamation is not feasible, it is the responsibility of the consumer to dispose of this product in accordance with all federal, state, or local laws or regulations regarding disposal.

Section 7: Handling and Storage

In general all Tungsten Carbide products are safe materials to handle and store in almost all commonly encountered environments.

Maintain good housekeeping procedures to prevent dust or accumulation during grinding operations. Avoid dust inhalation and direct skin contact with dust.

Wash hands thoroughly after handling, before eating or 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 from these items by washing or vacuuming (with the appropriate filters)

Section 8: Exposure Controls / Personal Protection

Cemented Carbide in sintered form does not present any known risk. When ground particles of dust can become airborne that could be inhaled, ingested or come into contact with the skin or eyes. All precautions to prevent these exposures should be practiced at all times.

Ventilation: When dust, mist or fumes are generated as a result of dry or wet grinding, local exhaust ventilation should be used to minimize exposure.

Eyewash: A safety eyewash station should be provided in the work area.

Eye and Face Protection: Safety glasses should be used as appropriate for grinding or manufacturing with cemented carbide.

Skin Protection: Protective gloves and clothing should be worn, as appropriate, to prevent contact of dust or slurry with the skin. Wash hands and skin thoroughly after contact with carbide, especially before eating or drinking.

Respiratory Protection: In the case of dust or mist generation, use a half-face or full-face respirator equipped with high efficiency particulate (HEPA) filter cartridges.

Exposure: See table in Section 3

Section 9: Physical and Chemical Properties

Appearance & Odor:	Gray Metal or Powder / No odor	Solubility in water:	Insoluble
Boiling Point:	N/A	Specific Gravity:	(H ₂ O=1) 11.0 to 15.5
Melting Point:	N/A	Percent Volatile by Volume:	N/A
Vapor Pressure (mmHg):	N/A	How best monitored:	Air Sample
Vapor Density (AIR=1):	N/A		

Section 10: Stability and Reactivity

Reactivity: Not Reactive

Conditions to avoid: N/A

Stability: Stable

Materials to avoid: Strong acids and oxidizers

Hazardous Polymerization: Will not occur

Hazardous Decomposition: None

Section 11: Toxicological Information

During routine operations and use, cemented carbide products do not present inhalation, ingestion, skin contact or other chemical hazards. However, non-routine operations such as grinding, cutting, burning, brazing and welding of cemented products may release dusts or fumes which may present some health hazards.

The health hazards described below relate to powders which are used for the fabrication of cemented carbide products or from sludge derived therefrom.

Primary routes of entry – Inhalation, Skin Contact

Cobalt:

ACUTE exposure may cause shortness of breath, dyspnea, asthma, and wheezing, coughing, soreness in the chest, bronchitis, weight loss, hemoptysis, interstitial fibrosis and radiological changes.

CHRONIC exposure May cause “hard metal disease” with obstructive airways symptoms and other symptoms listed in acute overexposure pneumoconiosis, sensitization, interstitial lung disease and radiological changes. Both sensitization and interstitial fibrosis are permanent.

Cadmium:

CHRONIC exposure to Cadmium dusts and fumes may cause mild anemia, inflammation of the nose and throat, behavioral disorders (sleeplessness, loss of appetite, etc.) and significant renal peritubular damage.

Cadmium has exhibited teratogenic effects in rats, mice, hamsters; whether it does in humans is unknown.

Nickel:

Chronic exposure to Nickel dusts and fumes may cause pulmonary irritation and pneumonitis or sensitization dermatitis. Individuals with Wilson’s disease may wish to limit occupational exposure to copper dust.

CARCINOGENIC ASSESSMENT: Nickel is listed by IARC and NTP as a Human Carcinogen. Cadmium dust is listed by IARC and NTP as a Probable Human Carcinogen.

Section 12: Ecological Information

No known ecological hazards at this time.

Section 13: Disposal Considerations

Tungsten Carbide Product is a valuable material and it is recommended that waste materials should be recycled. If reclamation is not feasible, it is the responsibility of the consumer to dispose of this product in accordance with all federal, state, or local laws or regulations regarding disposal.

Section 14: Transport Information

DOT: Not regulated

IMO: Not regulated

IATA: Not regulated

Section 15: Regulatory Regulations

Solid Carbide cutting tools are not a regulated product.

Section 16: Other

User Responsibilities: This Safety Data Sheet provides information consistent with recommended applications of these products and anticipated non-routine activities involving the product. It is the user's responsibility to identify and protect against health and safety hazards presented by modification of solid carbide cutting tools after manufacture. Individuals handling solid carbide cutting tools should be informed of all relevant hazards and recommended safety precautions, and should have access to the information contained in this SDS.

Disclaimer: The information contained herein is based upon data provided by manufacturers and suppliers of raw materials used in the manufacture of our solid carbide cutting tools. The information is offered in good faith as accurate and correct as this SDS issue date, but no representations, guarantees, or warranties of any kind are made as to its accuracy or completeness, suitability for particular applications, hazards connected with the use of product, or the results to be obtained from the use thereof. User assumes all risk and liability of any use or handling of any material beyond this manufacturer's control. Variations in methods, conditions, equipment used to store, handle, or process the material, and hazards connected with the use of the product are solely the responsibility of the user and remain at its sole discretion.

When applicable, the tools described in this SDS are considered to be "articles" within the meaning of Title 29 of the Code of Federal Regulations, Section 1910.1200 et seq. This SDS is intended to be used solely for the purpose of satisfying informational requests made pursuant to that requirement. It is not intended to preempt, replace, or expand the terms contained in this manufacturer's Condition of Sale. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe workplace, to examine all aspects of its operation, and to determine if or where precautions, in addition to those described herein, are required.

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