

SAFETY DATA SHEET

Section 1: Identification

Product Name: PCD Insert
Chemical Name: Polycrystalline Diamond and Cemented Carbide (Base Insert)
Molecular Weight: N/A

Manufactured by: **American Carbide Tool Company**
3620 Progress St. NE
Canton, OH 44705
Ph: (330) 455-2009
Fax: (330) 453-8498

Recommended use: For machining metal, plastic, wood, or other materials

Restriction on use: N/A

Emergency number: 911

Section 2 : Hazard(s) Identification

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

A warning label advising of this danger must be present on any and all product packaging.

Polycrystalline Diamond and Cemented Carbide in their solid state are not fire hazards. Dusts generated in grinding operations may ignite if allowed to accumulate.

Flash Point: N/A

Flammable Limits: N/A

Section 3: Composition/ Information on Ingredients

<u>Material</u>	<u>(CAS#)</u>	<u>Percent by Weight</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
<i>PCD Layer</i>				
Tungsten Carbide	(12070-12-1)	60-90*	-----	5 mg/m ³ (as W)
Cobalt	(7440-48-4)	10-30*	0.1 mg/m ³	0.1 mg/m ³
<i>Brazing Layer</i>				
Silver	(7440-22-4)	20-60		
Copper	(7440-50-8)	15-50		
Nickel	(7440-02-0)	0-10		
<i>Cemented Carbide/ Base Insert</i>				
Tungsten Carbide	(12070-12-1)	60-90*	-----	5 mg/m ³ (as W)
Cobalt	(7440-48-4)	10-30*	0.1 mg/m ³	0.1 mg/m ³
Tantalum Carbide	(12070-06-3)	0.1-56*	5 mg/m ³ (as Ta)	5 mg/m ³ (as Ta)
Chromium Carbide	(12012-35-0)	0-10*	1 mg/mg ³ (as Cr ⁺³)	.5 mg/mg ³ (as Cr ⁺³)
Chromium (+3)	(7440-47-3)	0-10*	1 mg/mg ³	.5 mg/mg ³

*Depends on grade specifications

Section 4: First Aid Measures

- Inhalation:** Applicable for dust or mist inhalation. If symptoms of pulmonary involvement develop (coughing, wheezing, shortness of breath, etc.), remove from exposure and seek medical attention.
- Skin Contact:** If irritation or rash occurs, thoroughly wash affected area with soap and water and isolate from exposure. If irritation continues or rash persists, seek medical attention.
- Eye Contact:** If irritation occurs, flush with large amounts of water. If irritation persists, seek medical attention.
- Ingestion:** 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) : Cobalt has been listed as a suspected carcinogen on the NIOSH Toxic Substance List.

Section 5: Fire-fighting Measures

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

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

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.

Section 6: Accidental Release Measures

Ventilate area of spill. Clean up using methods which avoid dust generations 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 the appropriate NIOSH approved respirator.

Section 7: Handling and Storage

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

Clean up using methods which 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, before eating or smoking. Wash exposed skin at the end of the work shift. Do not shake clothing, rags or other items to remove the dust. Dust should be removed by washing or vacuuming (with appropriate filter) the clothing, rags, or other items.

Polycrystalline Diamond should be stored in a tightly closed container in a well ventilated area. Store under dry and cool conditions and away from incompatible materials (acids and oxidizing agents) and direct sunlight.

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

Section 8: Exposure Controls/ Personal Protection

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

Ventilation: Use local exhaust ventilation which is adequate to limit personal exposure to respirable airborne dust to levels which 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 are recommended.

Face Shield: Full face shield will provide added protection against skin or eye irritation and dust inhalation.

Section 9: Physical and Chemical Properties

Appearance and Odor:	Dark Gray solid - No odor	Specific Gravity (H ₂ O=1):	11.0-15.5
Boiling Point:	N/A	Percent Volatile by Volume:	0
Vapor Pressure (mm Hg):	N/A	Evaporation Rate:	N/A
Vapor Density (Air= 1):	N/A	How Best Monitored:	Air Sample
Solubility in Water:	Insoluble		

Section 10: Stability and Reactivity

Stability:	Stable
Incompatibility:	Contact of dust with strong oxidizers may cause fire or explosion. Acids.
Conditions to avoid:	Contact with incompatible materials.
Materials to avoid:	Strong Acids. Contact with acid may cause harmful generation of gas.
Hazardous Polymerization:	None. Hazardous Polymerization will not occur.

Section 11: Toxicological Information

Inhalation: 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, 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.

Skin Contact: Can cause irritation or an allergic skin rash due to cobalt sensitization.

Eye Contact: Can cause irritation.

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

Section 12: Ecological Information N/A

Section 13: Disposal Considerations

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

Section 14: Transport Information N/A

Section 15: Regulatory Information:

Federal OSHA Hazard Communication Standard 29 CFR 1910.1200

SARA 302 Components: No chemicals in this material are subject to reporting requirements of SARA Title III, Section 302.

SARA 313 Components: The following components are subject to reporting levels established by SARA Title III, Section 313: Cobalt

Toxic Substances Control Act (TSCA): This product is in compliance with all rules and orders of TSCA.

Section 16: Other Information:

In case of questions, please call:

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