



MATERIAL SAFETY DATA SHEET
As of: August 23, 2005

Micro 100 Tool Corporation
1410 E Pine Ave, Meridian, ID, 83642
800-635-3080

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CHEMICAL NAME: Cemented Carbide Product with Cobalt binder
TRADE NAME & SYNONYMS: MICRO 100 SUPER CARBIDE
CHEMICAL FAMILY: Refractory Metal Carbide
MOLECULAR WEIGHT: N/A

PHYSICAL DATA

Appearance and Odor:	Dark Gray Metal/No Odor	Specific Gravity (H₂O = 1):	11.0 to 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		

HAZARDOUS INGREDIENTS

Material	Percent by Weight	OSHA PEL	ACGIH TLV
Tungsten (limits for Tungsten dust)	67 – 97%	---	5 mg/m ³
Cobalt	3 – 30%	0.1 mg/m ³	0.1 mg/m ³
Tantalum (limits for Tantalum dust)	0 – 20%	5 mg/m ³	5 mg/m ³
Molybdenum (limits for Molybdenum dust)	0 – 5%	15 mg/m ³	10 mg/m ³

HEALTH HAZARD DATA

Routes of Exposure: Grinding cemented tungsten carbide product with Cobalt binder may produce potentially hazardous dust which can be inhaled, swallowed, or come in contact with the skin or eyes.

Effects of Overexposure:
Inhalation Dust from grinding can cause irritation of the nose and throat. Some studies associate periodic inhalation of this respirable dust with the potential for transient respiratory reaction in Cobalt hyper sensitized individuals and prolonged excessive inhalation or respirable dust or mist with transient, permanent, or fatal respiratory disease. Adverse reactions are purportedly due to the Cobalt ingredient.

Skin Contact Can cause irritation or transient allergic skin rash in Cobalt hyper sensitized individuals.

Eye Contact Can cause pain or irritation.

Ingestion Reports outside the industry suggest that ingestion of significant amounts of Cobalt has the potential for causing blood, heart, and other organ problems.

Emergency and First Aid Procedures:

Applicable for dusts or mists.

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 or rash persists, seek medical attention.

Eye Contact If irritation occurs, flush copious 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, others):

None of the components of this material have been identified as known or suspected carcinogens by NTP, IARC, or OSHA.



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FIRE AND EXPLOSION HAZARD DATA

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

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

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

Special Fire Fighting Procedures: For a powder fire contained in 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.

REACTIVITY DATA

Stability: **Conditions to Avoid:** N/A

Unstable
Stable X

Incompatibility: Contact of dust with strong oxidizers may cause fire or explosions. **Materials to Avoid:** Strong acids.

Hazardous Decomposition Products: None **Conditions to Avoid:** N/A

Hazardous Polymerization:
May Occur
Will Not Occur: X

SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:

Ventilate area of spill. Clean up methods which avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet 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.

SPECIAL PROTECTION INFORMATION

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 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.

Other Protective Equipment: N/A



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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.

Other Precautions:

Clean up 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. Do not use coolant for wet clean up.

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.

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