Retzinger Kept

MATERIAL SAFETY DATA SHEET

MANCHESTER TOOL COMPANY
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TELEPHONE (330) 644-8853

IDENTIFICATION

PRODUCT NAME:	Tool Carbide Grades with Cobalt/Nickel binder (the "Products") (all parts with M4 series ex: M40, M45 etc.).
CHEMICAL NAME:	Cemented Carbide Product with Cobalt/Nickel binder
CHEMICAL FAMILY:	Refractory Metal Carbide
MOLECULAR WEIGHT:	N/A

HAZARDOUS INGREDIENTS

MATERIAL	Percent By Weight	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)
TUNGSTEN CARBIDE	75.0-96.0*	--	5
COBALT	4.0-25.0*	0.1	0.1
NICKEL	0.0-2.0*	1	1
VANADIUM CARBIDE	0.0-0.4*	--	0.05

*DEPENDS ON GRADE SPECIFICATIONS.
CADMIUM AND/OR NICKEL MAY BE PRESENT IN BRAZED TOOLS - SEE APPLICABLE MATERIAL SAFETY DATA SHEET.

PHYSICAL DATA

Appearance and Odor	Dark Gray Metal / No Odor	Specific Gravity(H_2O=1):	13.7 to 15.2
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		

FIRE AND EXPLOSION HAZARD DATA

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

- Hard Cemented Carbide Products is not a fire hazard. Dusts generated in grinding operations applied to the Products may ignite if allowed to accumulate and subjected to an ignition source.
- Extinguishing Media: For resulting powder fires, smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water.
- Special Fire Fighting Procedures: For a resulting powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a resulting large fire involving this material, 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.

HEALTH HAZARD DATA

ROUTES OF EXPOSURE: Grinding cemented carbide products will produce dust containing potentially hazardous ingredients which can be inhaled, swallowed or come in contact with the skin or eyes. Wet grinding of the Products will produce a coolant mist containing such dust.

EFFECTS OF OVEREXPOSURE TO DUST AND MIST (COLLECTIVELY "DUST"):

- INHALATION Dust from grinding the Products can cause irritation of the nose and throat. It also has the potential for causing transient or permanent respiratory disease, including occupational asthma asthma and interstitial fibrosis, in a small percentage of individuals exposed thereto. It is reported that exposure to 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 scaring) can lead to permanent disability or death. Certain pulmonary conditions may be aggravated by exposure to dust.
- SKIN CONTACT Dust can cause an irritation or skin rash due to cobalt sensitization. Certain skin conditions, such as dry skin, may be aggravated by such exposure.
- EYE CONTACT Dust can cause 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 exposure to dust s and mists generated from grinding the Products.

- INHALATION If symptoms of pulmonary involvement develop from such exposure (coughing, wheezing, shortness of breath, etc.), remove from such exposure. If irritation or rash persists, seek medical attention.
- SKIN CONTACT If irritation or rash occurs from such exposure, thoroughly wash affected area with soap and water and isolate from such exposure. If irritation or rash persists, seek medical attention.
- EYE CONTACT If irritation occurs from such exposure, flush with copious amounts of water. If irritation persists, seek medical attention.
- INGESTION If substantial quantities of dust are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

Carcinogenic Assessment (NTP Annual Report, IAAC Monographs, other): None of the components of this material have been identified as known or suspected carcinogens by NTP, IAAC or OSHA.

REACTIVITY DATA

Stability: Stable
Conditions to Avoid: N/A
Incompatibility: Contact of dust with strong oxidizers may cause fire or explosions.

Hazardous Decomposition Products: None
Hazardous Polymerization: Not Known To Occur
Materials to Avoid: Strong Acids

SPILL OR LEAK PROCEDURES

- 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 vacuum (with appropriate filter to prevent airborne dust Levels which exceed the PEL or TLV), wet dust mop or wet cleanup. If airborne dust is generated, all Exposed personnel should use an appropriate NIOSH approved respirator.

Waste Disposal Methods Carbide & Carbide Dust:

- 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 TVL. All appropriate requirements set forth I 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 when grinding the Products.
- PROTECTIVE GLOVES: Protective Gloves or Barrier cream is 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

SPECIAL PRECAUTIONS

- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Maintain good housekeeping
- Procedures to prevent dust accumulation during grinding of the Products. Avoid dust inhalation and
- Direct skin contact with dust.

OTHER PRECAUTIONS:

- Clean up using methods which avoid dust generation such as vacuum (with appropriate filter to prevent airborne levels, which exceed PEL or TLV), wet dust mop or wet cleanup. If airborne dust is generated, all exposed personnel should use an appropriate NIOSH approved respirator.
- Wash hands thoroughly after handling the Products or the dust, 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.

In Case of questions please call:

MANCHESTER TOOL COMPANY

SAFETY DIRECTOR
(330) 644-8853

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