**MATERIAL SAFETY DATA SHEET**

**SECTION I - GENERAL INFORMATION** 

COMPANY NAME: Viking Drill & Tool, Inc. TELEPHONE #: 612-227-8911
ADDRESS (Number, Street, City, State and Zip Code) DATE: APRIL 11, 1997
355 State St., St. Paul, MN. 55107

CHEMICAL NAME: **CEMENTED TUNGSTEN CARBIDE PRODUCT WITH COBALT BINDER**
TRADE NAME AND SYNONYMS: PERCUSSION/MASONRY CEMENTED TUNGSTEN CARBIDE GRADES.
CHEMICAL FAMILY REFRACTORY METAL CARBIDE MOLECULAR WEIGHT: N/A

**SECTION II - HAZARDOUS INGREDIENTS**

| MATERIAL | PERCENT BY WEIGHT | OSHA PEL | ACGIH TLV |
|---|---|---|---|
| Tungsten Carbide (limits for Tungsten dust) | 50-98% * | ---- | 5 $mg/m^3$ |
| Cobalt | 2-30% * | 0.1 $mg/m^3$ | 0.1 $mg/m^3$ |
| Tantalum Carbide (limits for Tantalum dust) | 0.0-20.0% * | 5 $mg/m^3$ | 5 $mg/m^3$ |
| Chromium Carbide (limits for Chromium ($^{+3}$) dust) | 0.0-5.0% * | 1 $mg/m^3$ | .05 $mg/m^3$ |
| Chromium ($^{+3}$) | 0.0-5.0% * | 1 $mg/m^3$ | .05 $mg/m^3$ |

* Depends on grade specifications

**SECTION III - PHYSICAL DATA**

BOILING POINT: NA
SPECIFIC GRAVITY ($H_20$=1): 11.0 to 15.5 VAPOR PRESSURE (mm Hg): N/A
VAPOR DENSITY (AIR=l): N/A SOLUBILITY IN H20: Insoluble
% VOLATILES BY VOLUME: 0 EVAPORATION RATE: N/A
APPEARANCE AND ODOR: Dark Gray Metal/No Odor HOW BEST MONITORED: Air Sample

**SECTION IV - FIRE AND EXPLOSION DATA**

FLASH POINT: NA 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.

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

**SECTION V - HEALTH HAZARD INFORMATION**

Routes of Exposure: Grinding cemented tungsten carbide product will produce dust of potentially hazardous ingredients 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. 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.

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 V - HEALTH HAZARD INFORMATION (continued)**

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 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.

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**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 VI - REACTIVITY DATA**

STABILITY: Stable — CONDITIONS TO AVOID: N/A

INCOMPATIBILITY: Contact of dust with strong oxidizers may cause fire or explosions. — MATERIALS TO AVOID: Strong Acids

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: Will Not Occur — CONDITIONS TO AVOID: N/A

**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 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.

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 concentrations exceed the appropriate PEL or TLV. All appropriate requirements set forth in 29 CFR 1910.134 should be met.

VENTILATION REQUIREMENTS: 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.

OTHER PROTECTIVE EQUIPMENT: N/A

**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.

OTHER PRECAUTIONS: 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 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.