MATERIAL SAFETY DATA SHEET

American National Carbide

915 South Cherry Street
Tomball, Texas U.S.A. 77375-6669
(281) 351-7165

CHEMICAL NAME: Cemented Carbide Product with Cobalt Binder
PRODUCTS ADDRESSED: All ANC Cemented Carbide Grades
TRADE NAMES & SYNONYMS: Hard Metal, Cemented WC, Tungsten Carbide
CHEMICAL FAMILY: Refractory Metal Carbide
MOLECULAR WEIGHT: N/A
MOLECULAR FORMULA: Mixture; Varies by Grade

PHYSICAL DATA

Appearance and Odor:	Dark Gray Metal / No Odor	Specific Gravity (H_2O = 1):	11.0 to 15.5
Boiling Point:	N/A	Percentage Volatile by Volume:	0
Vapor Pressure (mm Hg):	N/A	Evaporation Rate:	N/A
Vapor Density (Alr=1):	N/A	How Best Monitored:	Air Sample
Solubility in Water:	Insoluble		

HAZARDOUS INGREDIENTS

Material		Percent by Weight	OSHA PEL	ACGIH TLV
Tungsten Carbide	(limits for Tungsten dust)	41.0 - 97.0% *	5 mg / m^3	5 mg / m^3
** Cobalt		3.0 - 30.0% *	0.1 mg / m^3	0.02 mg / m^3
Tantalum Carbide	(limits for Tantalum dust)	0.0 - 52.0% *	5 mg / m^3	5 mg / m^3
Titanium Carbide	(limits for Titanium dust)	0.0 - 20.0% *	5 mg / m^3	none established
Niobium Carbide	(limits for Niobium dust)	0.0 - 20.0% *	5 mg / m^3	5 mg / m^3
Molybdenum Carbide	(limits for Molybdenum dust)	0.0 - 10.0% *	15 mg / m^3	10 mg / m^3
Hafnium Carbide	(limits for Hafnium dust)	0.0 - 10.0% *	0.5 mg / m^3	0.5 mg / m^3
Chromium Carbide	(limits for Chromium (+3) dust)	0.0 - 5.1% *	0.5 mg / m^3	0.5 mg /m^3
Vanadium Carbide	(limits for Vanadium dust)	0.0 - 2.0% *	none established	none established

* Depends on grade specifications
** Identifies substances that are subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

HEALTH HAZARD DATA

ROUTES OF EXPOSURE:
Grinding cemented carbide product or handling of grinding sludges will produce dust of potentially hazardous ingredients that 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 coughing, 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. Certain skin conditions, such as dry skin, may be aggravated by exposure.

Eye Contact - 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 dust 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 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):
The International Agency for Research on Cancer (IARC) found there was inadequate evidence that metallic cobalt is carcinogenic to humans but that there is sufficient evidence that it is carcinogenic in animals. IARC concluded that metallic cobalt is possibly carcinogenic to humans (Substance Group 2B). Cobalt has not been classified as a known or suspected carcinogen by OSHA or the National Toxicology Program. Chromium is listed by IARC and NTP as a human carcinogen.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A

EXTINGUISHING MEDIA: For powder fires, smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water.

SPECIFIC 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: Hard cemented carbide product is not a fire hazard. Dust generated in grinding operations 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 and use.

REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

INCOMPATIBILITY: Contact of dust with strong oxidizers may cause fire or explosions.

CONDITIONS TO AVOID: Contact with incompatible materials

HAZARDOUS DECOMPOSITION PRODUCTS: None

MATERIALS TO AVOID: Strong acids, strong oxidizers

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 exceeding the PEL or TLV) or wet clean-up. If airborne dust is generated, use an appropriate NIOSH approved respirator.

WASTE DISPOSAL METHOD: Dispose of in accordance with applicable government regulations. May be sold as scrap for reclamation.

SPECIAL PROTECTION INFORMATION

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

VENTILATION: Use adequate local exhaust ventilation to limit personal exposure to airborne dust to levels below the PEL or TLV. If such equipment is not available, use respirators as specified above.

PROTECTION 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. Eyewash equipment should be available and accessible at the workplace.

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. Avoid dust inhalation and direct skin contact with dust.

OTHER PRECAUTIONS: Clean up using methods that avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels exceeding the PEL and TLV) 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 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.

FOR FURTHER INFORMATION, PLEASE CALL:
AMERICAN NATIONAL CARBIDE COMPANY
915 South Cherry Street
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(281) 351-7165

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N/A - Not Applicable