

Fansteel Hydro Carbide
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**MATERIAL SAFETY
 DATA SHEET**
 REVISED 11/27/00

CHEMICAL NAME: Cemented Tungsten Carbide Product with Cobalt binder.

Trade Name and Synonyms: All Fansteel Hydro Carbide Tungsten Carbide Grades.

Chemical Family: Refractory Metal Carbide

Molecular Weight: N/A

PHYSICAL DATA

Appearance & Odor:	Dark Gray Metal/No Odor	Specific Gravity:	(H ₂ O=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

	<u>Percent by Weight</u>	<u>CAS Number</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Tungsten Carbide	62-98.5%*	12070-12-1	5 mg/m ³ nuisance dust, as W	5 mg/m ³ for insoluble tungsten compounds, as W
Cobalt	1.5-25%*	7440-48-4	0.1 mg/m ³ metal, dust, and fume, as Co	0.02 mg/m ³ elemental and inorganic compounds, as Co
Tantalum Carbide	0.0-50%*	12070-06-3	5 mg/m ³ metal and oxide dusts, as Ta	5 mg/m ³ metal and oxide dusts, as Ta

*Depends on grade specifications

Section 313 Supplier Notification - Tungsten carbide contains between 1.5% and 25.0% Cobalt (Chemical Abstract Service (CAS) Number 7440-48-4) which is subject to the reporting requirements of §313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 C.F.R. Part 372. This supplier notification information should be included in all MSDSs that are copied and distributed for this material.

California Proposition 65 Compliance – WARNING: This product contains a chemical (i.e., cobalt) known to the State of California to cause cancer.

HEALTH HAZARD DATA**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 skin or eyes.

Medical Condition Aggravated by Exposure:

Certain pulmonary and skin conditions may be aggravated by exposure.

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 (or lung scarring), in certain individuals who are exposed over a period of time. 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 can lead to permanent disability or death. Coolant mist from wet grinding may contain dust.

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

Eye Contact - Can cause irritation

Ingestion - Certain reports outside the tungsten carbide 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 this chemical contacts the skin, wash the contaminated skin with soap and water. If irritation or rash persists, seek medical attention.

Eye Contact - If this chemical contacts the eyes, immediately wash the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical.

Ingestion - If substantial quantities are swallowed, dilute with a large amount of water, induce vomiting and seek medical attention.

Carcinogenic Assessment (NIP Annual Report, IARC Monographs, other):

The IARC lists Cobalt as a possible carcinogen to humans (Group 2B) due to evidence for animal carcinogenicity (Cobalt, IARC Monogram on Evaluation of Carcinogenic Risk of Chemicals to Man, Vol 52, Page 363, 1991).

FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A Test Method Used: N/A 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 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.

REACTIVITY DATA

Stability: Unstable Stable Conditions to Avoid:
N/A

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

Materials to Avoid:
Acids, strong bases, fluorine, chlorine trifluoride, oxides of nitrogen, and lead dioxide.

Hazardous Decomposition Products:
May produce acrid smoke and irritating fumes when heated to decomposition.

Hazardous Polymerization: Conditions to Avoid:
 May Occur Will Not Occur N/A

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 HEPA filter to prevent airborne dust levels which exceed 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.

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 that is adequate to limit personal exposure to airborne dust to levels that do not exceed the PEL or TLV. Venting through an appropriate dust collection system may be necessary. If such equipment is not available use respirators as specified above.

Protective Gloves: Protective gloves or Barrier cream are recommended when in 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: Before using as a cutting tool, make sure tool is properly seated and safely clamped. Always use machine guards and wear safety glasses and protective clothing to prevent injury in the event of tool breakage.

SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storage: Pickup dust and grinding mist and maintain good housekeeping procedures to prevent dust accumulation during grinding. 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 HEPA 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.

In Case of Questions Please Call:
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