

MATERIAL SAFETY DATA SHEET

Chemical Name: Cemented Tungsten Carbide Product with Cobalt Binder

Trade Name: All LMT-FETTE Tungsten Carbide Grades

Chemical Family: Refractory Metal Carbide

Molecular Weight: N/A

PHYSICAL DATA

Appearance: Dark Gray Metal

Odor: Odorless

Boiling Point: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Solubility in Water: Insoluble

Specific Gravity: (H₂O = 1): 11.0 - 15.5

Percent Volatile by Volume: 0

Evaporation Rate: N/A

Monitoring Method: Air Sample

Taps

Thread Mills

Gages

End Mills

Tool Holders

Precision Workholding

HAZARDOUS INGREDIENTS

MATERIAL	CAS NUMBER	% BY WEIGHT	OSHA TLV-TWA (mg /m ³)	ACGIH TLV-TWA (mg /m ³)	NFPA HAZARD RATING SCALE 1-4		
					HEALTH	FIRE	REACTIVITY
Tungsten Carbide	12070-12-1	30.0-97.7	5	5	NO RATING	0	0
Cobalt	7440-48-4	2.0-25.0	0.05	0.05	1	3	0
Tantalum Carbide	12070-06-3	0.1-15.0	5	5	NO RATING	0	0
Titanium Carbide	12070-08-5	0.1-15.0	5	5	NO RATING	0	0
Niobium Carbide	12069-94-2	0.1-15.0	5	5	NO RATING	0	0

HAZARD HEALTH DATA

Routes of Exposure:

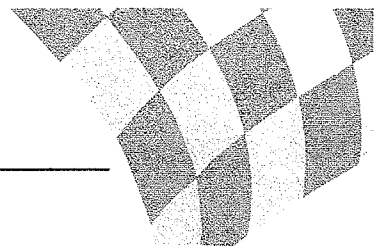
Grinding cemented tungsten carbide product will produce dust of potentially hazardous ingredients which can be inhaled, swallowed, or come in contact with skin and/or eyes.

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



HAZARD HEALTH DATA CONT...

Emergency and First Aid Procedures: Applicable for dusts and/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 areas 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 or rash persists, seek medical attention.

Ingestion- If substantial quantities are swallowed, dilute with large amounts of water. Induce vomiting and seek medical attention.

Carcinogenic Assessment (NPT Annual Report, LARC Monographs, other): Cobalt has been listed as a suspected carcinogen on the NIOSH toxic substance list.

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 are subject to an ignition source.

Extinguishing-For power fires, smother with dry sand, dry dolomite, ABC type fire extinguisher or flood

Special Fire Fighting Procedure- For 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 apparatuses.

Unusual Fire and Explosion Hazards-Dusts may present a fire or explosion hazard under rare favoring conditions or particular size, dispersion and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

REACTIVITY DATA

Stability: Unstable
 Stable

Condition to avoid: N/A

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

Materials to avoid: Strong acids

Hazardous Decomposition Products: None

Hazardous Polymerization: May Occur
 Will Not Occur

Conditions to avoid: N/A

REACTIVITY DATA

This product contains the following chemical subject to the reporting requirements of SARA 313, 40 CFR 372:

CAS Number: 7440-48-4

Chemical Name: Cobalt

Percent by Weight: 2.0-25.0

Taps

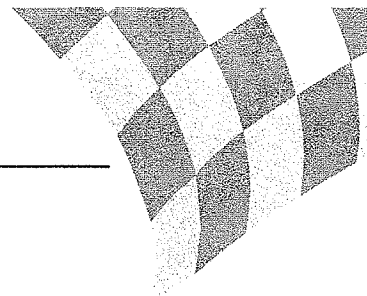
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SPILL OR LEAK PROCEDURE

Steps to be taken in case material is released or spilled-

Ventilate area of spill. Clean up using methods that avoid dust generation such as: vacuum (with appropriate filter to prevent airborne dust levels which exceed the OSHA PEL or the ACGIH 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 OSHA PEL or the ACGIH 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 airborne dust exposure to levels which do not exceed the OSHA PEL or the ACGIH 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 Barrier Cream, or use of Protective Gloves, was thoroughly.

Eye Protection- Safety glasses with sides 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. 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 OSHA PEL or the ACGIH 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 examinations are recommended for individuals regularly exposed to dust or mist.

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