

SAFETY DATA SHEET MANUAL	Effective Date: June 1, 2015	No. SDS - 2 Issue 1 Rev. 0 Page 1 of 5	Glen Carbide, Inc.
Title: Cemented Carbide Product			
Prepared By: Safety Committee		Approved By:	

SAFETY DATA SHEET

Section 1: Product and Company Identification

Manufacturer: Glen Carbide, Inc.
1054 Campbells Run Rd.
PO Box 498
Carnegie, PA 15106-0498
412-279-7500

Chemical Name: Cemented Carbide Product with Cobalt, Nickel, Nickel-Cobalt, Nickel-Cobalt Chromium Binder

Trade Name and Synonyms: All Tungsten Carbide Grades

Chemical Family: Refractory Metal Carbide

Section 2: Hazards Identification

Symbols:



Signal Word: Danger: Respiratory sensitization; may cause cancer if inhaled.

Warning: Skin Sensitization

Hazard Statement: May be harmful in contact with eyes or skin, if inhaled or swallowed.

During normal operation and usage, cemented carbide products do not present inhalation or ingestion hazards. Grinding and machining or other finishing methods for cemented carbide products will produce dust of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with the skin or eyes.

Inhalation: Dust from grinding and machining or other finishing methods 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 or nickel 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.

Section 3: Composition/Information on Ingredients

	Percent by weight*	CAS Number
Tungsten Carbide (limits for tungsten dust)	50-97%	(12070-12-1)
Nickel	0-25%	(7440-02-0)

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Cobalt Metal dust and fume (as Co.)	0-30%	(7440-48-4)
Tantalum Carbide (limits for tantalum dust)	0-22%	(12070-06-3)
Chromium Carbide (limits for Chromium(+3) dust)	0-5%	(7440-47-3)
Molybdenum	0-5%	(7439-98-7)

*Depends on grade specifications

Section 4: First-Aid Measures

Applicable for dusts and 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 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.**Section 5: Fire Fighting Measures****Flash Point:** N/A **Test Method Used:** N/A **LFL:** N/A **UFL:** N/A
Auto Ignition Temperature: N/A

Hard Cemented Carbide Products are 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, smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water.**Special Fire Fighting Procedures:** For a powder 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 6: Accidental Release Measures****Steps to be taken 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 to TWA STEL), wet dust mop or wet clean-up. If airborne dust is generated, use an appropriate NIOSH approved respirator.**Section 7: Handling and Storage**

Maintain good housekeeping procedures to prevent dust accumulation during grinding. Avoid dust inhalation and direct skin or eye contact with dust.

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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.

Section 8: Exposure Controls/Personal Protection

	<u>EXPOSURE LIMITS</u>		
	<u>ACGIH TLV*</u>	<u>US OSHA PEL**</u>	<u>US OSHA STEL***</u>
Tungsten Carbide (limits for tungsten dust) (12070-12-1)	10 mg/m3	15 mg/m3	10mg/m3
Nickel (7440-02-0)	1 mg/m3	1 mg/m3	-----
Cobalt Metal dust and fume (as Co.) (7440-48-4)	.02 mg/m3	.1 mg/m3	-----
Tantalum Carbide (limits for tantalum dust) (12070-06-3)	10 mg/m3	15 mg/m3	-----
Chromium Carbide (limits for Chromium (+3) dust) (7440-47-3)	.5 mg/m3	1 mg/m3	-----
Molybdenum (7439-98-7)	10 mg/m3	10 mg/m3	-----

*ACGIH TLV is the time weighted average exposure in any 8-hour work shift of a 40-hour work shift which may not be exceeded.

**PEL (Permissible Exposure Limit) is an employee's time weighted average (TWA) airborne exposure in any 8-hour work shift of a 40-hour week.

***STEL (Short Term Exposure Level) is an employee's 15-minute weighted average exposure at any time during a work day.

Steel Support material may pose potential hazards under certain conditions - see applicable Material Safety Data Sheet. Cadmium and/or Nickel may be present in Brazed Tools - see applicable Material Safety Data Sheet.

Respiratory Protection: Use an appropriate NIOSH approved respirator particularly if airborne dust concentrations exceed the appropriate TWA or STEL. All appropriate requirements set forth in 29 C.F.R. 1910.134 should be met. For proper selection of respirators, see also American National Standard Practices for Respiratory Protection Z88.2-1969.

Ventilation: Use local exhaust ventilation which is adequate to limit personal exposure to airborne dust to levels which do not exceed the TWA or STEL. 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.

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Periodic Medical Examinations: It has been suggested by OSHA that literature suggests possible adverse side effects of exposure to cobalt below the TWA or STEL. Accordingly, periodic medical examinations are recommended for individuals regularly exposed to dust or mist.

Other Protective Equipment: N/A

Section 9: Physical and Chemical Properties

Dark gray metal with no odor.

Physical State: Solid

Boiling Point: N/A

Freezing Point: N/A

Vapor Pressure: N/A

Vapor Density (Air=1): N/A

Solubility in water: Insoluble

pH: N/A

Specific Gravity: 11.0 to 15.5
(H₂O=1)

Odor Threshold: N/A

Percent Volatile

by Volume: 0

How Best Monitored: Air Sample

Coefficient of Water/

Oil Distribution: Not Established

Section 10: Stability and Reactivity

Stability: Unstable
Stable

Conditions to Avoid: N/A

Incompatibility: Contact of dust with acids or strong oxidizers may cause fire or explosions.
Will ignite on contact with Fluorine gas

Materials to Avoid: Strong Acids or Oxidizers
Fluorine gas

Hazardous Decomposition Products: None

Conditions to Avoid: N/A

Hazardous Polymerization: May Occur
Will Not Occur

Section 11: Toxicological Information

Routes of Exposure:

Skin Contact Skin Absorption Eye Contact Acute Inhalation Chronic Inhalation Ingestion

Grinding and machining or other finishing methods for cemented carbide products will produce dust of potentially hazardous ingredients which can be inhaled, swallowed or come in contact with the skin or eyes.

Effects of Overexposure:

Carcinogenicity: NTP IARC Other (see below).

Sensitization: Reproductive Toxicity Teratogenicity Mutagenicity

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Carcinogenicity: Nickel has been identified as a confirmed human carcinogen, section A1 of Appendix A of Threshold Limit Values and Biological Exposure Indices published by ACGIH. NIOSH has identified nickel as a carcinogen. NTP has listed nickel as reasonably anticipated to be a carcinogen, finding there was sufficient evidence of carcinogenicity of nickel in experimental animal and limited evidence of the carcinogenicity of nickel in humans. IARC found there was inadequate evidence that metallic cobalt and metallic nickel are carcinogenic to humans, but since there was sufficient evidence that they are carcinogenic to animals, IARC concluded that metallic cobalt and metallic nickel are possibly carcinogenic to humans. The ACGIH has designated cobalt as an animal carcinogen, i.e. the agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), or histologic type(s), or by mechanism(s) that are not considered relevant to worker exposure with available evidence suggesting the agent is not likely to cause cancer in humans except under uncommon or unlikely routes of exposure. Cobalt has not been classified as a known or suspected carcinogen by NTP, NIOSH, OR OSHA.

Synergistic Materials: The lung toxicities of cobalt and other ingredients of cemented tungsten carbide have been reported to be greater together than when administered separately. Nickel has been reported to be synergistic with certain carcinogens including polynuclear aromatic hydrocarbons and possibly asbestos.

Section 12: Ecological Information

None available

Section 13: Disposal Considerations

Dispose of in accordance with appropriate government regulations. May be sold as scrap for reclaim.

Section 14: Transport Information

U.S. Department of Transportation 49 CFR 171 to 180
 Hazardous Classification: Not Applicable
 Proper Shipping Name: Not Applicable
 Packing Group: None
 Labeling Requirements: Not Applicable

Section 15: Regulatory Information

This product contains cobalt or nickel which are substances that are subject to the requirements of Section 313 of Title III and the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR Part 372. This product may be subject to the applicable provision of state laws, such as, the Pennsylvania Worker and Community Right-to-Know Act.

Section 16: Other Information

CERCLA Rating (Scale 0-3): Health: 0 Fire: 0 Reactivity: 0 Persistence: 0

In case of questions please contact:

Glen Carbide, Inc.
P.O. Box 498
1054 Campbells Run Rd.
Carnegie, PA 15106
 Safety Committee
 (412)279-7500 -Tel.
 (412)279-7503 - Fax

Supersedes: **MSDS issued 8-24-98**

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