

MATERIAL SAFETY DATA SHEET (MSDS)

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SECTION 1 COMPANY INFORMATION

Company Name: Carbidetek Inc.
PO BOX 93113
City of Industry, California 91715, USA

Contact Person:

Emergency Call: +1-626-508-1014 (Not staffed 24/7)

Fax No.: +1-626-228-2482

SECTION 2 PRODUCT INFORMATION

Product Name: Cemented Tungsten Carbide

Synonyms: WC, Carbide, Cemented Carbide, Tungsten Carbide

CAS.NO.: 12070-12-1

Chemical Formula: WC+Co

Hazardous Composition: Nil.

SECTION 3 HAZARDOUS IDENTIFICATION**Health Hazards:**

No health hazards are known to exist or have been reported from exposure to this material in its usual 'solid form', however, grinding a Tungsten Carbide product will produce dust and powder or a mist of potentially hazardous ingredients which can be inhaled, swallowed, or come in contact with the skin or eyes, and may be subject to combustion.

Environmental Impact:

No environmentally hazardous effect has been clearly reported about cemented carbide.

Physical & Chemical Impact:

Cemented Carbide is physically and mechanically stable in its solid form, and no hazards have been reported as regard of conflagration.

No acute hazards or impact have been reported.

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SECTION 4 FIRST AID MEASURES

Inhalation:

Inhalation of carbide dust, powder or mixture may lead to symptoms of pulmonary involvement (coughing, wheezing, dyspnea, etc.). In such case, remove to fresh air. If symptoms persist, seek medical attention.

Skin Contact:

Skin contact might lead to irritation or rash, thorough wash on affected area with soap and water should be applied and isolate from exposure. If irritation or rash persists, seek medical attention. **Note:** not to rub fibers into skin.

Eye Contact:

Immediate Removal of contact lenses is asked. Flush eyes with large amounts of purified water. If irritation persists, seek medical attention.

Ingestion:

If substantial quantity is swallowed, drink purified water for dilution and immediately seek medical attention.

SECTION 5 FIRE FIGHTING MEASURES

Flash Point: Not applicable

Lower Explosive Limit: Not applicable

Upper Explosive Limit: Not applicable

Cemented Tungsten Carbide products are not a fire hazard under normal conditions of use. However, dusts generated in grinding may be sensitive to static discharge or ignite if allowed to accumulate and then are exposed to an ignition source.

Extinguishing Media:

Appropriate dry powder extinguisher can be used with metal dust fires.

Special Fire Fighting Procedures:

Firefighters are required to wear a NIOSH/MSHA approved full-facepiece self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout gear.

Unusual Fire and Explosion Hazards:

Dusts or Powder may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion, concentration, or/and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

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Use methods (such as a high efficiency particulate air (HEPA) vacuum, wet dust mop, or wet clean-up) that can avoid dust generation.

Operating Personnel:

Personnel to process work piece or clean up dusts/powders, ect. are required to be in protective clothing including facepiece, ect to alleviate direct or indirect exposure to dusts/powders.

Environmental Precaution:

Wastes such as dusts/powders should be collected instead to be discarded randomly.

SECTION 7**HANDLING AND STORAGE MEASURES**

Cemented Tungsten Carbide is physically and chemically stable. Under normal operating conditions, the use of carbide products do not require special safety precautions beyond normal safety procedures for handling and using, such as safety glasses and gloves. However, operations such as grinding, cutting, burning, and welding of carbide products may generate dusts or fumes which may require special handling procedures.

Long time using of or frequent exposure to dusts/powders and/or solution with cobalt or/and nickel content might lead to pachylosis.

Wash hands thoroughly after handling, and before eating or smoking. Wash exposed skin at the end of the work shift. Smoking and consumption of food or beverages should be restricted from areas where hazardous components may be present. Do not shake clothing, rags, or other items to remove dust. Dust should be removed by laundering or vacuuming (with appropriate filters) the clothing, rags, or other items.

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

Note:

Periodic medical monitoring is recommended for individuals regularly exposed to dust or fumes, with particular attention to any potential sensitization effects of such substances.

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SECTION 8 EXPOSURE CONTROLS, PERSONNEL PROTECTION

Engineering Control:

Use Protective Appliance such as Face Piece, Aspirator, etc to control aerosol dusts to below standard figure of admissible concentration as per below table.

Item	Substance	OSHA*PEL* Mg/m3	ACGIH*TLV* Mg/m3	JAIH*TLV* Mg/m3
1	WC	N/A*	5(as W)	N/A
2	TaC	N/A	N/A	N/A
3	NbC	N/A	N/A	N/A
4	TiC	N/A	N/A	N/A
5	TiN	N/A	N/A	N/A
6	VC	N/A	N/A	N/A
7	Co	0.1	0.02	0.05
8	Ni	1	1.5	1
9	Cr	1	0.5	0.5

*OSHA: Occupational Safety & Health Administration U.S. Department.

*PEL: Permissible Exposure Limit

*ACGIH: American Conference of Governmental Industrial Hygienists Inc.

*JAIH: Japan Association on Industrial Health

*TLV: Threshold Limit Value

*N/A: Not Applicable

Hygienic Practices:

1. Do not shake clothing, rags, or other items to remove dust. Dust should be removed by laundering or vacuuming (with appropriate filters) the clothing, rags, or other items.
2. Wear in clean clothing.
3. Evacuating Machines should be installed.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Order	Dark Gray Solid, Odorless		
Boiling Point	Not applicable	Specific Gravity(H ₂ O =1)	
Vapor Pressure (mmHg)	Not applicable	Percent Volatile by Volume	11. 0-15. 5
Vapor Density (Air=1)	Not applicable	Evaporation Rate	0
Solubility in Water	Insoluble		

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Dusts/powders at processing of cemented tungsten carbide may lead to irritation on nose, mouth, eyes, and/or throat, irritation on respiratory organ and lungs. Skin rash, coughing, breathing difficulty might occur. Over-inhalation of cobalt and/or nickel might result in symptoms of blood, heart, thyroid gland and/or splenic organ.

SECTION 12 ECOLOGICAL INFORMATION

No information or report found, but cobalt and chromium might have negative impact on environment, especially for aquatic organism.

SECTION 13 DISPOSAL CONSIDERATIONS

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

SECTION 14 TRANSPORTATION INFORMATION

DOT Proper Shipping Name	Not regulated by this mode of transportation
IMO Proper Shipping Name	Not regulated by this mode of transportation
IATA Proper Shipping Name	Not regulated by this mode of transportation
AFI Prop. Shipping Name	Not regulated by this mode of transportation

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This Material Safety Data Sheet provides information consistent with recommended applications of these products and anticipated non-routine activities involving the product. It is the user's responsibility to identify and protect against health and safety hazards presented by modification of Cemented Tungsten Carbide products after manufacture. Individuals handling Cemented Tungsten Carbide products should be informed of all relevant hazards and recommended safety precautions, and should have access to the information contained in this MSDS.

Disclaimer:

The information contained herein is based upon data provided by manufacturers and suppliers of raw materials used in the manufacture of Cemented Tungsten Carbide product. The information is offered in good faith as accurate and correct, but no representations, guarantees, or warranties of any kind are made as to its accuracy or completeness, suitability for particular applications, hazards connected with the use of the product, or the results to be obtained from the use thereof. User assumes all risk and liability of any use or handling of any material beyond the control of Carbide Tek. Variations in methods, conditions, equipment used to store, handle, or process the material, and hazards connected with the use of the product are solely the responsibility of the user and remain at its sole discretion. This MSDS is intended to be used solely for the purpose of satisfying informational requests made pursuant to that requirement. It is not intended to pre-empt, replace, or expand the terms contained in conditions of sale at Carbide Tek. Carbide Tek is unaware of any local, state or federal regulations which define the active ingredients as hazardous. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe workplace, to examine all aspects of its operation, and to determine if or where precautions, in addition to those described herein, are required. This information may not be valid for these products when manufactured with alternate materials meeting the special requirements of a particular user.

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