

**SPECIAL PROTECTION INFORMATION**

**Respirator 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 which is adequate to limit personal exposure to airborne dust to levels which do not exceed the PEL or TLV.

**Skin Protection:** Hand protection recommended. Consult with employer before using any gloves or barrier cream (some gloves present safety hazards).

**Eye Protection:** Safety glasses with side 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 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 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 and remove soiled clothing 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 by individuals regularly exposed to dust or mist.

**FOR CHEMICAL EMERGENCY**

**Spill, Leak, Fire, Exposure or Accident**  
**Call CHEMTREC - Day or Night: 1-800-424-9300**

**In case of questions please call:**

**Valenite Inc.**  
**Safety Manager**  
**(810) 589-1000**

**Issue Date: October 1994**

**Supersedes: March 1993**

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**MATERIAL SAFETY DATA SHEET**  
**VALENITE INC.**

CC

31700 Research Park Drive / Madison Heights, MI 48071-9636  
 Telephone No. (810) 589-1000

**CHEMICAL NAME:** Cemented carbide product  
**TRADE NAME AND SYNONYMS:** All Valenite Carbide Grades  
**CHEMICAL FAMILY:** MOLECULAR WEIGHT:  
 Refractory Metal Carbide Varies with grade

**PHYSICAL DATA**

<b>Physical State:</b>	Solid	<b>pH:</b>	N/A
<b>Boiling Point:</b>	N/A	<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	5.0 to 15.0
<b>Freezing Point:</b>	N/A	<b>Odor Threshold:</b>	N/A
<b>Vapor Pressure:</b>	N/A	<b>Percent Volatile by Volume:</b>	0
<b>Vapor Density:</b>	N/A	<b>Evaporation Rate:</b>	N/A
<b>Solubility in Water:</b>	Insoluble	<b>Coefficient of Water/Oil Distribution:</b>	NE**

**Appearance and Odor:** Dark Gray Metal/Odorless

**HAZARDOUS INGREDIENTS**

Material	CAS #	% by Weight***	OSHA PEL	ACGIH TLV
<b>Tungsten Carbide</b> (limits for insoluble tungsten compounds)	12070-12-1	0.97%	15 mg/m <sup>3</sup> ****	5 mg/m <sup>3</sup>
<b>Cobalt</b>	7440-48-4	0.30%	0.1 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> STEL
<b>Nickel</b>	7440-02-0	0.20%	1 mg/m <sup>3</sup>	0.02 mg/m <sup>3</sup>
<b>Tantalum Carbide</b> (limits for tantalum metal dusts)	12070-06-3	0.55%	5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
<b>Molybdenum Carbide</b> (limits for insoluble molybdenum compounds)	12069-89-5	0.15%	15 mg/m <sup>3</sup> ****	5 mg/m <sup>3</sup>
<b>Chromium Carbide (Cr<sub>2</sub>C<sub>2</sub>)</b> (limits for chromium III compounds, as Cr)	12012-35-0	0.5%	0.5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

This product contains substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

During normal usage, cemented carbide products do not present inhalation, ingestion, or other chemical hazards of any kind. Wet or dry grinding of these products may release dusts of potentially hazardous ingredients which can be inhaled, swallowed, or come in contact with skin and eyes. During wet grind, the dust can be suspended or dissolved in the coolant mist.

\*N/A = Not Applicable

\*\*NE = Not Established

\*\*\*\*Particulates not otherwise regulated: Total Dust

\*\*\*Depends on grade specification

\*\*\*\*Total Dust

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**HEALTH HAZARD DATA**

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**Routes of Exposure:**  Skin Contact  N/A Skin Absorption  Eye Contact  
 Acute Inhalation  Chronic Inhalation  Ingestion

**Effects of Exposure:**  Carcinogenicity:  NTP,  IARC,  N/A Other  Sensitization  
 N/A Reproductive Toxicity  N/A Teratogenicity  N/A Mutagenicity  N/A Synergistic Materials

**Inhalation** — Dusts or mists can cause irritation of the nose and throat. Inhalation can result in an allergic reaction in individuals previously sensitized, causing difficult breathing. Dusts or mists also have the potential for causing transient or permanent respiratory disease, including occupational asthma and interstitial fibrosis in a small percentage of exposed individuals. Symptoms include productive cough, wheezing, shortness of breath, chest tightness and weight loss. Nickel is suspected of causing nasal and lung cancer. Symptoms include pain, bleeding, nasal obstruction, vision impairment, weight loss and voice resonance change.

**Skin Contact** — Can cause irritation or an allergic skin rash due to chromium, cobalt, or nickel sensitization in people susceptible to allergic reactions.

**Eye Contact** — Can cause irritation or conjunctivitis.

**Ingestion** — Ingestion of large amounts of cobalt over a period of time has the potential for causing blood, heart and other organ problems. Current scientific information indicates no adverse effect are likely from ingestion of small amounts of nickel dust generated from these products.

**Carcinogenicity:** The National Toxicology Program (NTP) found there was sufficient evidence of carcinogenicity of nickel in experimental animals and limited evidence for the carcinogenicity of nickel in humans. The International Agency for Research on Cancer (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. IARC and NTP found there was inadequate data for the carcinogenicity of chromium and trivalent chromium compounds. Cobalt has not been classified as a known or suspected carcinogen by NTP or OSHA. Nickel and chromium have not been classified as a known or suspected carcinogen by OSHA.

**Conditions Aggravated by Exposure:** Lung and other pulmonary and skin conditions may be aggravated by exposure.

**Emergency and First Air Procedures:**

**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 large 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.

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**FIRE AND EXPLOSION HAZARD DATA**

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**Flash Point:** N/A **Test Method Used:** \_\_\_\_\_ **Autoignition Temperature:** N/A

Hard cemented carbide product is not a fire hazard. Dusts generated in grinding operations may ignite if allowed to accumulate and are subjected to an ignition source.

**Flammable Limits:** N/A **LEL:** \_\_\_\_\_ **UEL:** \_\_\_\_\_

**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 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 when exposed to high temperature or ignition sources. However, this is not expected to be a problem under normal handling conditions.

**Hazardous Combustion Products:** May generate toxic fumes when heated.

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**REACTIVITY DATA**

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**Stability:**

Unstable  
Stable

**Hazardous Polymerization:**

May Occur  
Will Not Occur

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

**Material to Avoid:** Strong acids and oxidizers.

**Hazardous Decomposition Products:** Thermal decomposition may release tungsten carbide, cobalt, and nickel metallic oxides.

**Conditions to Avoid:** N/A

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**SPILL OR LEAK PROCEDURES**

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**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 which exceed the 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.