

# MATERIAL SAFETY DATA SHEET

## I PRODUCT IDENTIFICATION

**Trade Name:** Beryllium Carbide **Formula:** Be<sub>2</sub>C  
**CAS #:** 506-66-1 **Chemical Family:** Metal Carbide  
**Molecular Wt:** 33.03

## II HAZARDOUS INGREDIENTS

<u>Component:</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV:</u>	<u>Other:</u>	<u>Percent:</u>
Beryllium Carbide	.002 mg/m <sup>3</sup>	.002 mg/m <sup>3</sup>	C-.005 mg/m <sup>3</sup>	100

**Sec.302:** No **Sec.304:** Yes 1 lb **Sec.313:** Yes  
**HMIS Ratings (0-4): Health:** 4 **Flammability:** 3 **Reactivity:** 2

## III PHYSICAL/CHEMICAL CHARACTERISTICS

<b>Boiling Point (°C):</b>	N/E or N/A	<b>Melting Point:</b>	2100 °C
<b>Solubility in H<sub>2</sub>O:</b>	Decomposes with the evolution of methane gas	<b>Vapor Density:</b>	N/A
<b>Specific Gravity:</b>	1.90 at 15 °C	<b>Vapor Pressure:</b>	N/A
<b>Appearance and Odor:</b>	Yellow, hexagonal powder, no odor	<b>Evaporation Rate:</b>	N/A
<b>Physical States:</b>	Solid		

## IV FIRE AND EXPLOSION HAZARDS DATA

**Flash Point (Method used):** N/A (flammable solid) **Explosive Limits: LEL:** N/A **UEL:** N/A  
**Extinguishing Media:** Use: Class D or other metal extinguishing agent. Do Not Use: Water or carbon dioxide extinguisher.

**Special Fire Fighting Procedures:** Wear full face, and self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

**Unusual Fire and Explosion Hazards:** Dangerous when wet, evolves highly toxic fumes of oxides of beryllium and flammable methane gas.

## V HEALTH HAZARD DATA

**Routes of Entry:** Inhalation, Ingestion, Skin, and Eyes

**Health Hazards (acute and chronic):**

To the best of our knowledge the chemical, physical and toxicological properties of beryllium carbide have not been thoroughly investigated and recorded.

Exposure to beryllium compounds is by inhalation or locally on the skin. Exposure may cause dermatitis, chronic skin ulcers, rhinitis, nasopharyngitis, epistaxis, bronchitis, and in severe cases the development of acute pneumonitis with cough, scanty sputum, low grade fever, rales, dyspnea, and substernal pain. There may be radiographic changes of the lungs which typically show a diffuse haziness. May cause pulmonary edema and fatal pneumonitis. A delayed form of lung disease, characterized by granulomatous areas in the lung tissue, has been caused by industrial exposure. Symptoms can appear immediately or up to five years after exposure, and include shortness of breath, loss of appetite, loss of weight, fatigue, cyanosis, and increased cardiac or respiratory failure. Accidental subcutaneous exposure can cause granulomatous tumors (Sax, Dangerous Properties of Industrial Materials, eighth edition).

**Inhalation: Acute:** May cause irritation to the upper respiratory tract, pneumonitis, nasopharyngitis, lung fibrosis, dyspnea, weight loss, inflammation and edema of the larynx and bronchi.

**Chronic:** May cause pulmonary granulomas and berylliosis.

**Ingestion: Acute:** Considered to have low toxicity by ingestion. Poison by intravenous route.

**Chronic:** No chronic health effects recorded.

**Skin: Acute:** May cause irritation, contact dermatitis and non-healing ulcerations at the site of injury.

**Chronic:** May cause chronic skin ulcers.

**Eye: Acute:** May cause irritation, conjunctivitis and corneal burns.

**Chronic:** May cause visual impairment.

**Medical Conditions Generally Aggravated by Exposure:** Pre-existing lung and skin disorders.

**Target Organs:** May affect the lungs, thorax, respiration, liver, mucous membranes, skin and eyes.

**Carcinogenicity:** NTP: Yes      **IARC Monographs:** Yes      **OSHA Regulated:** Yes

**LD50/LC50:** No toxicity data recorded

#### **Signs and Symptoms of Exposure:**

**Inhalation:** May cause inflammation of lungs, nose, throat and the mucous membrane of both the trachea and bronchi, hyperemia, edema, hemorrhage with mild edema of the brain, inflammation of the liver, focal hemorrhage of the spleen, granulomatous, crippling, incurable lung disease, pneumonitis, pulmonary dysfunction, heart enlargement and congestive heart failure, cyanosis, enlargement of liver and spleen, digital clubbing, formation of kidney stones, malignant tumors, cellular infiltration, interstices of various organs and tissues and calcific inclusions in cells and tissues. Berylliosis may cause coughing, chest pain, shortness of breath, weight loss, weakness and fatigue.

**Ingestion:** No acute or chronic health effects recorded.

**Skin:** May cause redness, burning, rashes, itching and ulcerations.

**Eye:** May cause redness, itching, burning, and watering.

#### **EMERGENCY AND FIRST AID PROCEDURES:**

**EYES:** Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention immediately.

**SKIN:** Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, seek medical attention immediately.

**INHALATION:** Remove to fresh air. Keep warm and quiet, give oxygen if breathing is difficult, seek immediate medical attention.

**INGESTION:** If conscious, give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never give anything by mouth or induce vomiting on an unconscious person.

#### **VI REACTIVITY DATA**

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**Stability:** Stable

**Incompatibilities:** Water

**Conditions to Avoid:** None

**Hazardous Decomposition or Byproducts:** Methane gas and oxides of beryllium.

#### **VII PRECAUTIONS FOR SAFE HANDLING AND USE**

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**Steps to Be Taken in Case Material Is Released or Spilled:** Wear appropriate respiratory and protective equipment specified in Section VIII-Special Protection Information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter, to avoid dust, and place in a closed container for proper disposal. Use non-sparking tools.

**Waste Disposal Method:** Observe all federal, state & local regulations.

**Hazard Label Information:** Store in cool, dry area. Store in tightly sealed container. Wash thoroughly after handling.

## VIII SPECIAL PROTECTION INFORMATION

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**Respiratory Protection (Specify Type):** Wear a NIOSH-approved dust, mist, fume cartridge respirator.

**Ventilation: Local Exhaust:** To maintain concentration at or below the PEL, TLV

**Mechanical (general):** Not recommended

**Special:** Handle in a controlled atmosphere

**Other:** Handle in an inert gas such as argon

**Protective Gloves:** Rubber gloves

**Eye Protection:** Safety glasses

**Protective Clothing:** Clothes to prevent contamination

**Other Protective Equipment/Clothing:** Protective gear suitable to prevent contamination.

**Work/Hygienic/Maintenance Practices:** Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing with compressed air.

## IX ADDITIONAL COMMENTS

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Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulation and the Toxic Substances Control Act (TSCA), these materials should only be handled by, or under the direct supervision of, a "technically qualified individual", as defined in 40 CFR 710.2(aa). The above information is accurate to the best of our knowledge. However, since, data, safety standards, and government regulation are subject to change, and the conditions of handling and use or misuse are beyond our control, ESPI Makes No Warranty, Neither Expressed Nor Implied, with Respect to the Completeness or Continuing Accuracy of the Information Contained Herein, and Disclaims All Liability for Reliance Thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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Dated: March 1994