

BERYLLIUM CHLORIDE

BEC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid White to green Sharp odor
	Sinks and mixes violently with water.
	<p>Restrict access. AVOID CONTACT WITH SOLID AND DUST. Wear dust respirator and rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.</p>
Fire	Not flammable. Irritating gases may be produced when heated. Wear goggles and self-contained breathing apparatus. DO NOT USE WATER ON ADJACENT FIRES.
Exposure	<p>CALL FOR MEDICAL AID. DUST POISONOUS IF INHALED OR IF SKIN IS EXPOSED. If inhaled will cause coughing, difficult breathing, or loss of consciousness. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>SOLID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Will burn skin and eyes. If swallowed will cause nausea, coughing, or loss of consciousness. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

<p>1. CORRECTIVE RESPONSE ACTIONS Stop discharge Chemical and Physical Treatment: Neutralize Do not add water to undissolved material</p>	<p>2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: BeCl₂ 2.3 IMO/UN Designation: 6.1/1566 2.4 DOT ID No.: 1566 2.5 CAS Registry No.: 7787-47-5 2.6 NAERG Guide No.: 154 2.7 Standard Industrial Trade Classification: 52329</p>
<p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Respiratory protection; gloves; freshly laundered clothing; chemical safety goggles</p> <p>3.2 Symptoms Following Exposure: Inhalation causes pneumonitis, nasopharyngitis, tracheobronchitis, dyspnea, chronic cough. Ingestion causes irritation of mouth and stomach. Contact with dust causes conjunctival inflammation of eyes and irritation of skin. Any dramatic, unexplained weight loss should be considered as a possible first indication of beryllium disease.</p> <p>3.3 Treatment of Exposure: INHALATION: chest x-ray should be taken immediately for evidence of pneumonitis. EYES: flush with water for at least 15 min.; if irritation persists, get medical attention. SKIN: cuts or puncture wounds in which beryllium may be embedded under the skin should be thoroughly cleansed immediately by a physician.</p> <p>3.4 TLV-TWA: 0.002 mg/m³ (as beryllium)</p> <p>3.5 TLV-STEL: Not listed.</p> <p>3.6 TLV-Ceiling: 0.01 mg/m³ as beryllium</p> <p>3.7 Toxicity by Ingestion: Grade 3; oral rat LD₅₀ = 86 mg/kg</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Be produces a chronic systemic disease that primarily affects the lung but also can involve other organs such as lymph nodes, liver, bones, and kidney.</p> <p>3.10 Vapor (Gas) Irritant Characteristics: Currently not available</p> <p>3.11 Liquid or Solid Characteristics: Currently not available</p> <p>3.12 Odor Threshold: Currently not available</p> <p>3.13 IDLH Value: 4 mg/m³ as beryllium.</p> <p>3.14 OSHA PEL-TWA: 0.002 mg/m³ as beryllium.</p> <p>3.15 OSHA PEL-STEL: 0.025 mg Be/m³ 30 minute peak per 8 hour shift.</p> <p>3.16 OSHA PEL-Ceiling: 0.005 mg/m³ as beryllium</p> <p>3.17 EPA AEGL: Not listed</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:**
Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 4.3 **Fire Extinguishing Agents:** Not pertinent
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Do not use water on adjacent fires.
- 4.5 **Special Hazards of Combustion**
Products: Toxic and irritating beryllium oxide fumes and hydrogen chloride may form in fires.
- 4.6 **Behavior in Fire:** Currently not available
- 4.7 **Auto Ignition Temperature:** Not pertinent
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Reacts vigorously with evolution of heat. Forms beryllium oxide and hydrochloric acid solution.
- 5.2 **Reactivity with Common Materials:** Corrodes most metals in presence of moisture. Flammable and explosive hydrogen gas may collect in enclosed spaces.
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Flush with water, rinse with dilute solution of sodium bicarbonate or soda ash.
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**
0.15 ppm* 96 hr/fathead minnow/TL₅₀/soft fresh water
15 ppm* /96 hr/fathead minnow/TL₅₀/hard fresh water
*as beryllium
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** None
- 6.4 **Food Chain Concentration Potential:** Bioconcentration of 100-fold can occur under constant exposure. Not significant in spill conditions.
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 2
Human Oral hazard: 2
Human Contact hazard: II
Reduction of amenities: XXX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Commercial, 99+%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open
- 7.5 **IMO Pollution Category:** Currently not available
- 7.6 **Ship Type:** Currently not available
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Poison
- 8.2 **49 CFR Class:** 6.1
- 8.3 **49 CFR Package Group:** II
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** 1 pound
- 8.7 **EPA Pollution Category:** X
- 8.8 **RCRA Waste Number:** Not listed
- 8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
- 9.2 **Molecular Weight:** 79.9
- 9.3 **Boiling Point at 1 atm:** (sublimes) 968°F = 520°C = 793°K
- 9.4 **Freezing Point:** 824°F = 440°C = 713°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.90 at 25°C (solid)
- 9.8 **Liquid Surface Tension:** Not pertinent
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** -1,000 Btu/lb = -557 cal/g = -23.3 X 10³ J/kg
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** 30 cal/g (est)
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	R E A C T S		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T