

BERYLLIUM FLUORIDE

BEF

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid White Odorless Sinks and mixes with water.
<p>Restrict access. AVOID CONTACT WITH SOLID AND DUST. Wear chemical protective suit with self-contained breathing apparatus. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Not flammable.
Exposure	<p>CALL FOR MEDICAL AID. DUST POISONOUS IF INHALED, IF SWALLOWED, OR IF SKIN IS EXPOSED. Will burn eyes. Move to fresh air. 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 eyes. 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	<p>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>

<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: BeF₂ 2.3 IMO/UN Designation: 6.1/1566 2.4 DOT ID No.: 1566 2.5 CAS Registry No.: 7787-49-7 2.6 NAERG Guide No.: 154 2.7 Standard Industrial Trade Classification: 52310</p>
<p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Respiratory protection; gloves; goggles</p> <p>3.2 Symptoms Following Exposure: Any dramatic weight loss should be considered as possible first indication of beryllium disease. Inhalation causes irritation of nose, throat, and lungs, severe pneumonitis, and/or pulmonary edema. Ingestion causes fatigue, weakness, loss of appetite. Contact with eyes causes severe irritation and burns. Contact with skin causes dermatitis and non-healing ulcers.</p> <p>3.3 Treatment of Exposure: INHALATION: move to fresh air; chest x-ray should be taken immediately to detect pneumonitis, if exposure has been severe. INGESTION: induce vomiting; get medical attention. EYES: flush with water for at least 15 min.; get medical attention. SKIN: flush with water; get medical attention if skin has been broken.</p> <p>3.4 TLV-TWA: 0.002 mg/m³ (as beryllium) 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: 0.01 mg/m³ as beryllium. 3.7 Toxicity by Ingestion: Grade 3; oral LD₅₀ = 100 mg/kg (mouse) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Berylliosis of lungs may occur from 3 months to 15 years after exposure. Chronic systemic diseases of the liver, spleen, lymph nodes, bone, kidney, and other organs may also occur. 3.10 Vapor (Gas) Irritant Characteristics: Currently not available 3.11 Liquid or Solid Characteristics: Currently not available 3.12 Odor Threshold: Odorless 3.13 IDLH Value: 4 mg/m³ as beryllium. 3.14 OSHA PEL-TWA: 0.002 mg/m³ as beryllium. 3.15 OSHA PEL-STEL: 0.025 mg Be/m³ 30 minute peak per 8 hour shift. 3.16 OSHA PEL-Ceiling: 0.005 mg/m³ as beryllium. 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:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Toxic and irritating vapor of unburned material may form in fire.
- 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:** No reaction
- 5.2 **Reactivity with Common Materials:**
Currently not available
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
- 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/fresh (soft) water
15 ppm*/96 hr/fathead minnow/TL₅₀/fresh (hard) 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 under constant exposure only. Not significant under spill conditions.
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Purified, 99.99%; Chemically pure, 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:** 47
- 9.3 **Boiling Point at 1 atm:** Not pertinent (sublimes at 800°C)
- 9.4 **Freezing Point:** Not pertinent
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.99 at 20°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:** -180 Btu/lb = -98 cal/g = -4.1 X 10³ J/kg
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** 127.6 cal/g
- 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
77	50.000		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