

# COPPER BROMIDE

CPB

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION					
Common Synonyms Cupric bromide, anhydrous	Solid	Black	Odorless Sinks and mixes with water.	<p><b>4.1 Flash Point:</b> Not flammable</p> <p><b>4.2 Flammable Limits in Air:</b> Not flammable</p> <p><b>4.3 Fire Extinguishing Agents:</b> Not pertinent</p> <p><b>4.4 Fire Extinguishing Agents Not to Be Used:</b> Not pertinent</p> <p><b>4.5 Special Hazards of Combustion Products:</b> Irritating hydrogen bromide gas may form in fire.</p> <p><b>4.6 Behavior in Fire:</b> Currently not available</p> <p><b>4.7 Auto Ignition Temperature:</b> Not pertinent</p> <p><b>4.8 Electrical Hazards:</b> Not pertinent</p> <p><b>4.9 Burning Rate:</b> Not pertinent</p> <p><b>4.10 Adiabatic Flame Temperature:</b> Currently not available</p> <p><b>4.11 Stoichiometric Air to Fuel Ratio:</b> Not Pertinent</p> <p><b>4.12 Flame Temperature:</b> Currently not available</p> <p><b>4.13 Combustion Molar Ratio (Reactant to Product):</b> Not Pertinent</p> <p><b>4.14 Minimum Oxygen Concentration for Combustion (MOCC):</b> Not listed</p>	<p><b>7.1 Grades of Purity:</b> Pure, 99%, Reagent</p> <p><b>7.2 Storage Temperature:</b> Ambient</p> <p><b>7.3 Inert Atmosphere:</b> No requirement</p> <p><b>7.4 Venting:</b> Open</p> <p><b>7.5 IMO Pollution Category:</b> Currently not available</p> <p><b>7.6 Ship Type:</b> Currently not available</p> <p><b>7.7 Barge Hull Type:</b> Currently not available</p>					
<p>Keep people away. Avoid contact with solid and dust. Notify local health and pollution control agencies. Protect water intakes.</p>										
<b>Fire</b>	Not flammable. Irritating gases may be produced when heated. Cover with organic sulfur.			<p><b>8. HAZARD CLASSIFICATIONS</b></p> <p><b>8.1 49 CFR Category:</b> Not listed</p> <p><b>8.2 49 CFR Class:</b> Not pertinent</p> <p><b>8.3 49 CFR Package Group:</b> Not listed</p> <p><b>8.4 Marine Pollutant:</b> No</p> <p><b>8.5 NFPA Hazard Classification:</b> Not listed</p> <p><b>8.6 EPA Reportable Quantity:</b> Not listed</p> <p><b>8.7 EPA Pollution Category:</b> Not listed</p> <p><b>8.8 RCRA Waste Number:</b> Not listed</p> <p><b>8.9 EPA FWPCA List:</b> Not listed</p>						
<p><b>Exposure</b></p> <p>CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. If inhaled will cause coughing or difficult breathing. 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 Will burn eyes. Irritating to skin. 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>										
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.			<p><b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b></p> <p><b>9.1 Physical State at 15° C and 1 atm:</b> Solid</p> <p><b>9.2 Molecular Weight:</b> 223.35</p> <p><b>9.3 Boiling Point at 1 atm:</b> Not pertinent (decomposes)</p> <p><b>9.4 Freezing Point:</b> 928°F = 498°C = 771°K</p> <p><b>9.5 Critical Temperature:</b> Not pertinent</p> <p><b>9.6 Critical Pressure:</b> Not pertinent</p> <p><b>9.7 Specific Gravity:</b> 4.77 at 20°C (solid)</p> <p><b>9.8 Liquid Surface Tension:</b> Not pertinent</p> <p><b>9.9 Liquid Water Interfacial Tension:</b> Not pertinent</p> <p><b>9.10 Vapor (Gas) Specific Gravity:</b> Not pertinent</p> <p><b>9.11 Ratio of Specific Heats of Vapor (Gas):</b> Not pertinent</p> <p><b>9.12 Latent Heat of Vaporization:</b> Not pertinent</p> <p><b>9.13 Heat of Combustion:</b> Not pertinent</p> <p><b>9.14 Heat of Decomposition:</b> Not pertinent</p> <p><b>9.15 Heat of Solution:</b> -70.9 Btu/lb = -39.4 cal/g = -1.65 X 10<sup>5</sup> J/kg</p> <p><b>9.16 Heat of Polymerization:</b> Not pertinent</p> <p><b>9.17 Heat of Fusion:</b> Currently not available</p> <p><b>9.18 Limiting Value:</b> Currently not available</p> <p><b>9.19 Reid Vapor Pressure:</b> Currently not available</p>						
<p><b>1. CORRECTIVE RESPONSE ACTIONS</b></p> <p>Dilute and disperse Stop discharge Contain Collection Systems: Dredge</p> <p><b>2. CHEMICAL DESIGNATIONS</b></p> <p>2.1 CG Compatibility Group: Not listed. 2.2 Formula: CuBr<sub>2</sub> 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 52329</p>										
<p><b>3. HEALTH HAZARDS</b></p> <p><b>3.1 Personal Protective Equipment:</b> Dust mask; goggles or face shield; protective gloves</p> <p><b>3.2 Symptoms Following Exposure:</b> Inhalation of dust causes irritation of throat and lungs. Ingestion of large amounts causes violent vomiting and purging, intense pain, collapse, coma, convulsions, and paralysis. Contact with solutions causes eye irritation; contact with solid causes severe eye surface injury and skin irritation.</p> <p><b>3.3 Treatment of Exposure:</b> INHALATION: move to fresh air. INGESTION: give large amount of water; induce vomiting; get medical attention. EYES: flush with water for at least 15 min.; get medical attention if injury was caused by solid. SKIN: flush with water.</p> <p><b>3.4 TLV-TWA:</b> Notice of intended change: 0.05 mg Cu/m<sup>3</sup> respirable particles</p> <p><b>3.5 TLV-STEL:</b> Not listed.</p> <p><b>3.6 TLV-Ceiling:</b> Not listed.</p> <p><b>3.7 Toxicity by Ingestion:</b> Grade 3; LD<sub>50</sub> = 50-500 mg/kg</p> <p><b>3.8 Toxicity by Inhalation:</b> Currently not available.</p> <p><b>3.9 Chronic Toxicity:</b> Currently not available</p> <p><b>3.10 Vapor (Gas) Irritant Characteristics:</b> Currently not available</p> <p><b>3.11 Liquid or Solid Characteristics:</b> Currently not available</p> <p><b>3.12 Odor Threshold:</b> Currently not available</p> <p><b>3.13 IDLH Value:</b> 100 mg Cu/m<sup>3</sup> (dusts, mists, fumes)</p> <p><b>3.14 OSHA PEL-TWA:</b> 0.1 mg/m<sup>3</sup> as copper</p> <p><b>3.15 OSHA PEL-STEL:</b> Not listed.</p> <p><b>3.16 OSHA PEL-Ceiling:</b> Not listed.</p> <p><b>3.17 EPA AEGL:</b> Not listed</p>										
<p><b>4. FIRE HAZARDS</b></p> <p><b>4.1 Flash Point:</b> Not flammable</p> <p><b>4.2 Flammable Limits in Air:</b> Not flammable</p> <p><b>4.3 Fire Extinguishing Agents:</b> Not pertinent</p> <p><b>4.4 Fire Extinguishing Agents Not to Be Used:</b> Not pertinent</p> <p><b>4.5 Special Hazards of Combustion Products:</b> Irritating hydrogen bromide gas may form in fire.</p> <p><b>4.6 Behavior in Fire:</b> Currently not available</p> <p><b>4.7 Auto Ignition Temperature:</b> Not pertinent</p> <p><b>4.8 Electrical Hazards:</b> Not pertinent</p> <p><b>4.9 Burning Rate:</b> Not pertinent</p> <p><b>4.10 Adiabatic Flame Temperature:</b> Currently not available</p> <p><b>4.11 Stoichiometric Air to Fuel Ratio:</b> Not Pertinent</p> <p><b>4.12 Flame Temperature:</b> Currently not available</p> <p><b>4.13 Combustion Molar Ratio (Reactant to Product):</b> Not Pertinent</p> <p><b>4.14 Minimum Oxygen Concentration for Combustion (MOCC):</b> Not listed</p>										
<p><b>5. CHEMICAL REACTIVITY</b></p> <p><b>5.1 Reactivity with Water:</b> No reaction</p> <p><b>5.2 Reactivity with Common Materials:</b> Currently not available</p> <p><b>5.3 Stability During Transport:</b> Stable</p> <p><b>5.4 Neutralizing Agents for Acids and Caustics:</b> Not pertinent</p> <p><b>5.5 Polymerization:</b> Not pertinent</p> <p><b>5.6 Inhibitor of Polymerization:</b> Not pertinent</p>										
<p><b>6. WATER POLLUTION</b></p> <p><b>6.1 Aquatic Toxicity:</b> Currently not available</p> <p><b>6.2 Waterfowl Toxicity:</b> Currently not available</p> <p><b>6.3 Biological Oxygen Demand (BOD):</b> None</p> <p><b>6.4 Food Chain Concentration Potential:</b> Copper known to be accumulated by shellfish. Hazard to humans unknown.</p> <p><b>6.5 GESAMP Hazard Profile:</b> Not listed</p>										
<p><b>7. SHIPPING INFORMATION</b></p> <p><b>7.1 Grades of Purity:</b> Pure, 99%, Reagent</p> <p><b>7.2 Storage Temperature:</b> Ambient</p> <p><b>7.3 Inert Atmosphere:</b> No requirement</p> <p><b>7.4 Venting:</b> Open</p> <p><b>7.5 IMO Pollution Category:</b> Currently not available</p> <p><b>7.6 Ship Type:</b> Currently not available</p> <p><b>7.7 Barge Hull Type:</b> Currently not available</p>										
<p><b>8. HAZARD CLASSIFICATIONS</b></p> <p><b>8.1 49 CFR Category:</b> Not listed</p> <p><b>8.2 49 CFR Class:</b> Not pertinent</p> <p><b>8.3 49 CFR Package Group:</b> Not listed</p> <p><b>8.4 Marine Pollutant:</b> No</p> <p><b>8.5 NFPA Hazard Classification:</b> Not listed</p> <p><b>8.6 EPA Reportable Quantity:</b> Not listed</p> <p><b>8.7 EPA Pollution Category:</b> Not listed</p> <p><b>8.8 RCRA Waste Number:</b> Not listed</p> <p><b>8.9 EPA FWPCA List:</b> Not listed</p>										
<p><b>9. PHYSICAL &amp; CHEMICAL PROPERTIES</b></p> <p><b>9.1 Physical State at 15° C and 1 atm:</b> Solid</p> <p><b>9.2 Molecular Weight:</b> 223.35</p> <p><b>9.3 Boiling Point at 1 atm:</b> Not pertinent (decomposes)</p> <p><b>9.4 Freezing Point:</b> 928°F = 498°C = 771°K</p> <p><b>9.5 Critical Temperature:</b> Not pertinent</p> <p><b>9.6 Critical Pressure:</b> Not pertinent</p> <p><b>9.7 Specific Gravity:</b> 4.77 at 20°C (solid)</p> <p><b>9.8 Liquid Surface Tension:</b> Not pertinent</p> <p><b>9.9 Liquid Water Interfacial Tension:</b> Not pertinent</p> <p><b>9.10 Vapor (Gas) Specific Gravity:</b> Not pertinent</p> <p><b>9.11 Ratio of Specific Heats of Vapor (Gas):</b> Not pertinent</p> <p><b>9.12 Latent Heat of Vaporization:</b> Not pertinent</p> <p><b>9.13 Heat of Combustion:</b> Not pertinent</p> <p><b>9.14 Heat of Decomposition:</b> Not pertinent</p> <p><b>9.15 Heat of Solution:</b> -70.9 Btu/lb = -39.4 cal/g = -1.65 X 10<sup>5</sup> J/kg</p> <p><b>9.16 Heat of Polymerization:</b> Not pertinent</p> <p><b>9.17 Heat of Fusion:</b> Currently not available</p> <p><b>9.18 Limiting Value:</b> Currently not available</p> <p><b>9.19 Reid Vapor Pressure:</b> Currently not available</p>										
<p><b>10. NOTES</b></p>										

# COPPER BROMIDE

CPB

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
NOT PERTINENT			NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

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
68	55.900		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT