

BROMOFORM

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CAUTIONARY RESPONSE INFORMATION

Common Synonyms Formyl tribromide Methane, tribromo- Methenyl tribromide Methylene tribromide Methyl tribromide	Liquid	Colorless to yellow	Sweetish, chloroform-like
Sinks and very slowly mixes with water.			
<p>AVOID CONTACT WITH LIQUID AND VAPOR. KEEP PEOPLE AWAY. Wear positive pressure breathing apparatus and special protective clothing. Stay upwind and use water spray to "knock down" vapor. Notify local health and pollution control agencies. Protect water intakes.</p>			
Fire	Not flammable. POISONOUS GASES MAY BE PRODUCED IN FIRE. Extinguish adjacent small fires: dry chemical, CO ₂ , water spray or foam; large fires: water spray, fog or foam.		
Exposure	CALL FOR MEDICAL AID. VAPOR Harmful if inhaled; narcotic effects. Lachrymator; irritating to eyes, skin and respiratory tract. Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Harmful if swallowed, contacts skin or eyes, or is absorbed through skin. IF IN EYES OR ON SKIN, flush with running water for at least 15 min.; hold eyelids open if necessary. Remove and isolate contaminated clothing and shoes at the site. IF SWALLOWED and victim is CONSCIOUS, have victim take syrup of ipecac to induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.		
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.		

1. CORRECTIVE RESPONSE ACTIONS Stop discharge Contain Collection Systems: Pump; Dredge Dilute and disperse	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: CHBr ₃ 2.3 IMO/UN Designation: 6.1/2515 2.4 DOT ID No.: 2515 2.5 CAS Registry No.: 75-25-2 2.6 NAERG Guide No.: 159 2.7 Standard Industrial Trade Classification: 51138
3. HEALTH HAZARDS	
<p>3.1 Personal Protective Equipment: Wear positive pressure breathing apparatus and special protective clothing.</p> <p>3.2 Symptoms Following Exposure: Harmful if inhaled, swallowed, contacts skin or eyes or is absorbed through skin. It is a lachrymator, respiratory irritant, a narcotic and an hepatotoxin. Prolonged exposure may cause dermatitis. Inhalation causes irritation of nose and throat; provokes the flow of tears and saliva and reddening of the face. Ingestion may cause dizziness, disorientation and slurred speech, unconsciousness and death.</p> <p>3.3 Treatment of Exposure: INHALATION: Move victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. EYES OR SKIN: Flush with running water for at least 15 min.; hold eyelids open if necessary. Wash skin with soap and water. Remove and isolate contaminated clothing and shoes at the site. INGESTION: If victim is conscious, have victim take syrup of ipecac to induce vomiting.</p> <p>3.4 TLV-TWA: 0.5 ppm (skin) 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 2; LD₅₀ = 1,147 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Causes mutagenic and tumorigenic effects. May cause liver damage and depression of the central nervous system. 3.10 Vapor (Gas) Irritant Characteristics: Irritating to eyes, skin, pharynx, larynx, and respiratory tract; lachrymator. 3.11 Liquid or Solid Characteristics: Irritating to eyes and skin. 3.12 Odor Threshold: 1-6 mg/m³ 3.13 IDLH Value: 850 ppm. 3.14 OSHA PEL-TWA: 0.5 ppm. 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: Not listed. 3.17 EPA AEGL: Not listed</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:** Not flammable
- 4.2 **Flammable Limits in Air:** Not pertinent
- 4.3 **Fire Extinguishing Agents:** Not flammable Extinguish adjacent small fires: dry chemical, CO₂, water spray or foam; large fires: water spray, fog or foam.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** May decompose to produce toxic gases and vapor such as hydrogen bromide and bromine.
- 4.7 **Auto Ignition Temperature:** Not pertinent
- 4.8 **Electrical Hazards:** Currently not available
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Not pertinent
- 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:** Reacts with some forms of plastics, rubber and coatings. Reacts with powdered aluminum, zinc and magnesium.
- 5.3 **Stability During Transport:** Stable. Protect from light and oxygen. Stabilized with 75 to 125 ppm diphenylamine or 1-3% ethanol.
- 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:** 1 mg/l/48 hr/eastern oyster larvae/LD₅₀/saltwater
56 ppm/24 hr/water flea/LC₅₀/freshwater
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** Currently not available
- 6.4 **Food Chain Concentration Potential:** Currently not available
- 6.5 **GESAMP Hazard Profile:**
 Bioaccumulation: 0
 Damage to living resources: 2
 Human Oral hazard: 1
 Human Contact hazard: II
 Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 96%; 99%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** Currently not available
- 7.4 **Venting:** Currently not available
- 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:** Keep Away From Food
- 8.2 **49 CFR Class:** 6.1
- 8.3 **49 CFR Package Group:** III
- 8.4 **Marine Pollutant:** Yes
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** 100 pounds
- 8.7 **EPA Pollution Category:** B
- 8.8 **RCRA Waste Number:** U225
- 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
- 9.2 **Molecular Weight:** 252.75
- 9.3 **Boiling Point at 1 atm:** 302.9°F. = 150.5°C. = 423.7°K
- 9.4 **Freezing Point:** 47.3°F. = 8.5°C. = 281.7°K.
- 9.5 **Critical Temperature:** 796°F. = 425°C. = 698°K. (est)
- 9.6 **Critical Pressure:** Currently not available
- 9.7 **Specific Gravity:** 2.8912 at 20°C.
- 9.8 **Liquid Surface Tension:** 41.53 dynes/cm = .04153 N/m at 20°C.
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** 8.7
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
- 9.12 **Latent Heat of Vaporization:** 68.9 Btu/lb = 38.3 cal/g = 1.60X10⁵ KJ/kg
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Currently not available
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** Currently not available
- 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
68	180.500	260	0.074		C U R R E N T L Y N O T A V A I L A B L E	59	2.152

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	0.100	75	0.088	75	0.00398	77	0.067
		100	0.242	100	0.01014		
		125	0.528	125	0.02095		
		150	1.000	150	0.03790		
		175	1.716	175	0.06255		
		200	2.739	200	0.09655		
		225	4.137	225	0.14160		
		250	5.982	250	0.19943		
		275	8.352	275	0.27186		
		300	11.327	300	0.36074		