

SODIUM 2-MERCAPTOBENZOTHAZOL SOLUTION

SMB

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 2-Benzothiazolethiol, sodium salt 2-(3h)-Benzothiazolethione, sodium salt Duodex Nacap Sodium 2-benzothiazolethioate	50% aqueous solution Amber Old rubber Sinks and Mixes.
<p>Keep people away. Avoid contact with liquid or spray. Wear self-contained positive pressure breathing apparatus and full protective clothing. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	VERY TOXIC FUMES EMITTED WHEN HEATED TO DECOMPOSITION. Wear self-contained positive pressure breathing apparatus and full protective clothing. Extinguish with water spray, carbon dioxide, dry chemicals, foam.
Exposure	CALL FOR MEDICAL AID. LIQUID May cause irreversible damage to eyes or skin. Large amount on skin may cause severe depression and/or death. If swallowed may cause tremors, convulsions, severe depression, hematuria or death. Remove and isolate contaminated clothing and shoes at the site. Wash contaminated areas with soap and running water. IF IN EYES OR ON SKIN, flush with running water for at least 15 min.; hold eyelids open if necessary. Clean skin with soap and water. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing but keep victim warm.
Water Pollution	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.

1. CORRECTIVE RESPONSE ACTIONS Stop discharge Dilute and disperse	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: C ₆ H ₄ SC(SNa) _n 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 2492-26-4 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 51549
3. HEALTH HAZARDS	
<p>3.1 Personal Protective Equipment: For spills of aqueous solutions-wear splash-proof goggles, respirator, and protective rubber clothing. Firefighters should wear full protective clothing and self-contained positive pressure breathing apparatus.</p> <p>3.2 Symptoms Following Exposure: Contact with moisture in the body by inhalation may yield sodium hydroxide (corrosive) and 2-mercaptobenzothiazole, an irritant. Contact with the eyes caused opacity or ulceration of the cornea, inflammation of the iris, redness and swelling of the conjunctiva and partial eversion of the eye lids, and destruction or irreversible tissue change in 24 hours or less (rabbit). A dose of 2,500 mg/kg applied to the skin caused severe depression, cold extremities, appetite loss; 4 of 10 died. Exposure of the skin to 1,250 mg/kg caused a severe degree of skin injury. The skin was burned in 24 hours with formation of hard eschar at 1-2 weeks; 1 of 10 rabbits died. Ingestion caused tremors, convulsions, severe depression and hematuria in male rats. Ingestion of 312.5 mg/kg: 1 of 5 male rats die on day 2; 625 mg/kg: 2 of 5 died within 3-5 minutes; 1,250 mg/kg: 3 of 5 died within 3-5 minutes; 2,500 mg/kg: 100% mortality within 3-5 minutes. Hemorrhage of the stomach occurred in all rats that died.</p> <p>3.3 Treatment of Exposure: INHALATION: Move victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. EYES: Flush eyes with large quantity of fresh running water for at least 15 minutes; hold eyelids open if necessary. SKIN: Wash with soap and running water; remove and isolate contaminated clothing and shoes at the site. Keep victim quiet and maintain normal body temperature. INGESTION: If victim is unconscious or having convulsions, do nothing except keep victim warm.</p> <p>3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 2; LD₅₀ = 3.12 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Currently not available 3.11 Liquid or Solid Characteristics: A 50% solution in water caused a severe degree of skin injury and destruction or irreversible eye damage in 24 hours or less. (rabbit) 3.12 Odor Threshold: 16 ppm 3.13 IDLH Value: Not pertinent 3.14 OSHA PEL-TWA: Not listed. 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 pertinent
- 4.2 **Flammable Limits in Air:** Not pertinent
- 4.3 **Fire Extinguishing Agents:** Water spray, carbon dioxide, dry chemicals, foam on nearby fires.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Contain very toxic fumes of SO_x, NO_x, and Na₂O.
- 4.6 **Behavior in Fire:** May decompose at elevated temperatures to yield toxic fumes.
- 4.7 **Auto Ignition Temperature:** Currently not available
- 4.8 **Electrical Hazards:** Not pertinent
- 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:** Not pertinent.
- 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:** Concentrated aqueous solutions are corrosive.
- 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:** Currently not available
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** Currently not available
- 6.4 **Food Chain Concentration Potential:** Slight
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 50% aqueous solution
- 7.2 **Storage Temperature:** Not listed
- 7.3 **Inert Atmosphere:** Not listed
- 7.4 **Venting:** Not listed
- 7.5 **IMO Pollution Category:** B
- 7.6 **Ship Type:** 3
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Not listed
- 8.2 **49 CFR Class:** Not pertinent
- 8.3 **49 CFR Package Group:** Not listed.
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** Not listed.
- 8.7 **EPA Pollution Category:** Not listed.
- 8.8 **RCRA Waste Number:** Not listed
- 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:** Not pertinent
- 9.3 **Boiling Point at 1 atm:** Not pertinent
- 9.4 **Freezing Point:** Currently not available
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.255 at 25°C
- 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:** Currently not available
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Not pertinent
- 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
	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
	S O L U B L E		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