SODIUM HYDROSULFIDE SOLUTION

SHR

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Sodium bisulfide Sodium hydrogen sulfide Sodium sulfhydrate	Liquid Mixes with water.	Light yellow to red	Rotten egg odor

Keep people away.
Avoid contact with liquid and vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Not flammable.

Exposure

Call for medical aid.

LIQUID
Irritating to skin and eyes.
If swallowed will cause nausea, vomiting, 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.

Water Pollution

Dangerous to aquatic life in high 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

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 5; Caustic
2.2 Formula: NaSH-H_2O
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: 2922
2.5 CAS Registry No.: 16721-80-5
2.6 NAERG Guide No.: 154
2.7 Standard Industrial Trade Classification: 52342

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Rubber protective equipment, such as apron, boots, splash- proof goggles, gloves; canister-type respirator or self-contained breathing apparatus.

3.2 Symptoms Following Exposure: Inhalation of mist causes irritation of respiratory tract and possible systemic poisoning; hydrogen sulfide gas, which may be given off when acid is present, causes headache, dizziness, nausea, vomiting; continued exposure can lead to loss of conscious- ness, respiratory failure, and death. Liquid causes marked eye irritation; itching, lachrymation, swelling, and corneal injury causing blurring of vision are the most common effects; exposure to light may increase the painful effects. Contact of liquid with skin causes irritation and corrosion of tissue; continued exposure may cause dermatitis. Ingestion causes severe burning and corrosion of all portions of the gastro- intestinal tract, pain in the throat and abdomen, nausea, and vomiting, followed by diarrhea. In severe cases, collapse, unconsciousness, and paralysis of respiration may be expected.

3.3 Treatment of Exposure: INHALATION: move victim from contaminated atmosphere; call physician; if breathing has ceased, start mouth-to-mouth resuscitation. EYES: immediately flush with large quantities of running water for a minimum of 15 min.; obtain medical attention as soon as possible; while awaiting instructions from physician, patient may be kept in a dark room and ice compresses applied to the eyes and forehead. SKIN: immediately flush affected areas with water; obtain medical attention if irritation persists. INGESTION: obtain medical attention as soon as possible; if patient is conscious, induce vomiting by giving large amounts of water or warm salty water (2 tablespoons of table salt to a pint of water); if this measure is unsuccessful, vomiting may be induced by tickling back of patient's throat with a finger. Vomiting should be encouraged until the vomitus is clear. If patient is unconscious, do not give anything but ensure there is no obstruction to breathing (his tongue should be kept forward and false teeth removed). He will be less likely to aspirate vomitus if he is placed in a face-down position.

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; LD_{50} = 0.5 to 5 g/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause moderate irritation such that personnel will find high concentrations unpleasant. The effect is temporary.
3.11 Liquid or Solid Characteristics: Fairly severe skin irritant. May cause pain and second- degree burns after a few minutes' contact.
3.12 Odor Threshold: 0.0047 ppm
3.13 IDLH Value: Not listed.
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

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: Not pertinent
4.6 Behavior in Fire: Not pertinent
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 Stoichometric 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: Corrodes most metals, but reaction is not hazardous.
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Flood with water.
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: 206 mg/1/96 hr/mosquito fish/TL_m/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 2
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: 45% or less
7.2 Storage Temperature: >63°F
7.3 Inert Atmosphere: No requirement
7.4 Venting: Pressure-vacuum
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: Corrosive material
8.2 49 CFR Class: 8
8.3 49 CFR Package Group: II
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: Yes

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: (approx.) 212°F = 100°C = 373°K
9.4 Freezing Point: (approx.) 63°F = 17°C = 290°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.3 at 15°C (liquid)
9.8 Liquid Surface Tension: Currently not available
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: 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: 0.95 psia

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
63	81.320		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE
64	81.290						
65	81.250						
66	81.219						
67	81.179						
68	81.150						
69	81.110						
70	81.080						
71	81.040						
72	81.009						
73	80.980						
74	80.940						
75	80.910						
76	80.870						
77	80.839						
78	80.799						
79	80.770						
80	80.730						
81	80.700						
82	80.660						
83	80.629						
84	80.591						
85	80.559						
86	80.520						

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
	CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE