SODIUM HYDROXIDE SOLUTION

SBX

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Liquid	Colorless	Odorless
	Mixes with water.		

Keep people away. Avoid contact with liquid and vapor.
Wear rubber overclothing (including gloves) and self-contained respirator.
Call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Noncombustible
Flammable, explosive gas may be produced on contact with metals, acids or when heated.

Exposure

CALL FOR MEDICAL AID.

LIQUID
POISONOUS IF SWALLOWED
Extremely corrosive to eyes, skin, nose, throat, and upper respiratory tract.
IF IN EYES: hold eyelids open, flush with running water for at least 15 minutes.
Remove contaminated clothing and shoes, flush affected areas with plenty of running water for at least 15 minutes.
IF SWALLOWED and victim is CONSCIOUS: have victim drink water, milk, dilute vinegar, lemon juice, or olive oil to dilute the material.
IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS: do nothing except keep victim warm.
DO NOT INDUCE VOMITING

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: 5; Caustics
2.2 Formula: $NaBH_4$ and NaOH in aqueous solution
2.3 IMO/UN Designation: 4.3/1426 & 8.0/1824
2.4 DOT ID No.: 1824
2.5 CAS Registry No.: Not pertinent
2.6 NAERG Guide No.: 157
2.7 Standard Industrial Trade Classification: 52263

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Goggles, rubber gloves, and protective clothing.
3.2 Symptoms Following Exposure: Liquid is extremely corrosive to the eyes, nose, throat, upper respiratory tract, and skin. If ingested can form large volume of gas and lead to a gas embolism.
3.3 Treatment of Exposure: INGESTION: Do NOT induce vomiting; give dilute vinegar, lemon juice, milk, or olive oil; call a doctor. SKIN AND EYES: Flood with large amount of water.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 4; LD_{50} = 18 mg/kg (rat) Violent reaction with acid in stomach. Toxic because of boron content.
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Non-volatile.
3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second and third degree burns on short contact and is very injurious to the eyes.
3.12 Odor Threshold: Odorless
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 pertinent
4.2 Flammable Limits in Air: Not pertinent
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: May decompose and produce highly flammable hydrogen gas.
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: 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: Reacts with acid to form toxic, flammable diborane gas. Slowly corrodes glass.
5.3 Stability During Transport: Stable unless mixed with acids or overheated.
5.4 Neutralizing Agents for Acids and Caustics: Flush with water, rinse with dilute acetic acid or vinegar.
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: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 1
Human Oral hazard: 2
Human Contact hazard: II
Reduction of amenities: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: 12% solution in 43% aqueous sodium hydroxide.
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Sealed containers must be stored in well-ventilated area.
7.5 IMO Pollution Category: C
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: Currently not available.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	0
Instability (Yellow).....	1

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: Currently not available
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: Not pertinent
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: 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
	CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE

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