SODIUM

SDU

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Soft solid under kerosene Silver to grayish-white Odorless Floats and reacts violently with water. Flammable gas is produced.

Evacuate.
Keep people away. AVOID CONTACT WITH SOLID.
Shut off ignition sources and call fire department.
Wear goggles, and rubber overclothing (including gloves).
Notify local health and pollution control agencies.

Fire	FLAMMABLE. FIRE MAY START ON CONTACT WITH AIR. Flammable gas formed on contact with water or moisture. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). DO NOT USE WATER, CARBON DIOXIDE, OR VAPORIZING LIQUIDS. Extinguish with dry graphite, soda ash, powdered sodium chloride or other approved dry powder.
Exposure	CALL FOR MEDICAL AID. SOLID Will burn skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.
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 dissolved material
Stop discharge
Do not add water to undissolved material
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: Na
2.3 IMO/UN Designation: 4.3/1428
2.4 DOT ID No.: 1428
2.5 CAS Registry No.: 7440-23-5
2.6 NAERG Guide No.: 138
2.7 Standard Industrial Trade Classification: 52228

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Maximum protective clothing; goggles and face shield.
3.2 Symptoms Following Exposure: Severe burns caused by burning metal or by caustic soda formed by reaction with moisture on skin.
3.3 Treatment of Exposure: SKIN: brush off any metal, then flood with water for at least 15 min.; treat as heat or caustic burn; call a doctor.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Not pertinent
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: None
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: Dry soda ash, graphite, salt, or other approved dry powder such as dry limestone.
4.4 Fire Extinguishing Agents Not to Be Used: Water, carbon dioxide or halogenated extinguishing agents.
4.5 Special Hazards of Combustion Products: Fumes of burning Na are highly irritating to skin, eyes, and mucous membranes.
4.6 Behavior in Fire: Not pertinent
4.7 Auto Ignition Temperature: 250°F
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: 1.2 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 0.5 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: Reacts violently, with formation of flammable hydrogen gas and caustic soda solution. A fire often occurs.
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: After reaction with water, caustic soda formed can be diluted with water and/or neutralized with acetic acid.
5.5 Polymerization: Not pertinent
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity: Not pertinent
6.2 Waterfowl Toxicity: Not pertinent
6.3 Biological Oxygen Demand (BOD): None
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: Commercial grade: 99.95%
7.2 Storage Temperature: 230°–250°F (liquid); ambient (solid)
7.3 Inert Atmosphere: Dry nitrogen or argon (for liquid); under kerosene (for solid)
7.4 Venting: Pressure-vacuum
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: Dangerous When Wet
8.2 49 CFR Class: 4.3
8.3 49 CFR Package Group: I
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	1
Instability (Yellow).....	2
Special (White).....	~~W~~

8.6 EPA Reportable Quantity: 10 pounds
8.7 EPA Pollution Category: A
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: Solid
9.2 Molecular Weight: 22.49
9.3 Boiling Point at 1 atm: 1621°F = 883°C = 1156°K
9.4 Freezing Point: 207.5°F = 97.5°C = 370.7°K
9.5 Critical Temperature: 3632.0°F = 2000°C = 2273.2°K
9.6 Critical Pressure: 5040 psia = 343 atm = 34.8 MN/m^2
9.7 Specific Gravity: 0.971 at 20°C (solid)
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: 27.4 cal/g
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
	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
	REACTS		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT