

SODIUM NITRATE

SDN

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Solid, granular	Colorless to white	Odorless
Chile saltpeter Nitratine Soda niter		Sinks and mixes with water.		
<p>Evacuate. Keep people away. Avoid contact with solid and dust. Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Not flammable. May cause fire and explode on contact with combustibles. POISONOUS GASES MAY BE PRODUCED IN FIRE. Wear goggles and self-contained breathing apparatus. Flood discharged area with water.			
Exposure	CALL FOR MEDICAL AID. SOLID If swallowed, may cause dizziness, abdominal cramps, vomiting, convulsions, and collapse. Flush exposed 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 very 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: Not listed.
- 2.2 Formula: NaNO₃
- 2.3 IMO/UN Designation: 5.1/1498
- 2.4 DOT ID No.: 1498
- 2.5 CAS Registry No.: 7631-99-4
- 2.6 NAERG Guide No.: 140
- 2.7 Standard Industrial Trade Classification: 52359

3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Rubber gloves, goggles, laboratory coat.
- 3.2 Symptoms Following Exposure: INGESTION: Dizziness, abdominal cramps, vomiting, bloody diarrhea, weakness, convulsions, and collapse. Small repeated doses may cause headache and mental impairment.
- 3.3 Treatment of Exposure: See a physician. EYES: Rinse with water. SKIN: Wash with water for 15 minutes. INGESTION: Drink water, milk, or activated charcoal; then induce vomiting or gastric lavage followed by catharsis.
- 3.4 TLV-TWA: Not listed.
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Grade 1; LD₅₀ = 5 to 15 g/kg.
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Ingestion of nitrates has been implicated with cancer increase.
- 3.10 Vapor (Gas) Irritant Characteristics: Not pertinent
- 3.11 Liquid or Solid Characteristics: Currently not available
- 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 flammable
- 4.2 Flammable Limits in Air: Not flammable
- 4.3 Fire Extinguishing Agents: Use flooding amounts of water.
- 4.4 Fire Extinguishing Agents Not to Be Used: Currently not available
- 4.5 Special Hazards of Combustion Products: Yields toxic gaseous oxides of nitrogen when involved in fire.
- 4.6 Behavior in Fire: Explodes when heated to over 1000°C.
- 4.7 Auto Ignition Temperature: Not pertinent
- 4.8 Electrical Hazards: Currently not available
- 4.9 Burning Rate: Not flammable
- 4.10 Adiabatic Flame Temperature: Currently not available
- 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: Oxidizable substances, organic materials
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Will not occur.
- 5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

- 6.1 Aquatic Toxicity: 6,650 ppm/96-hour/Mosquito fish/TL_m/Turbid water
10,000 ppm/96-hour-Bluegill/TL_m
11,060 ppm/96-hour/Stickleback/TL_m/tap water
- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): 0 lb/lb, 5 days
- 6.4 Food Chain Concentration Potential: Currently not available
- 6.5 GESAMP Hazard Profile: Bioaccumulation: 0
Damage to living resources: 0
Human Oral hazard: 1
Human Contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Purified-at least 99% NaNO₃
- 7.2 Storage Temperature: Cool
- 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: Oxidizer
- 8.2 49 CFR Class: 5.1
- 8.3 49 CFR Package Group: III
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	0 1
Flammability (Red).....	0 0
Instability (Yellow).....	0 0
Special (White).....	OX OX

- * First column refers to non-fire situation.
- 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: Solid
- 9.2 Molecular Weight: 84.99
- 9.3 Boiling Point at 1 atm: Decomposes 716°F = 380°C = 653.2°K
- 9.4 Freezing Point: 584.2°F = 306.8°C = 580.0°K
- 9.5 Critical Temperature: Currently not available
- 9.6 Critical Pressure: Currently not available
- 9.7 Specific Gravity: 2.26 at room temperature
- 9.8 Liquid Surface Tension: Not pertinent
- 9.9 Liquid Water Interfacial Tension: Not pertinent
- 9.10 Vapor (Gas) Specific Gravity: 2.93 (calculated)
- 9.11 Ratio of Specific Heats of Vapor (Gas): Currently not available
- 9.12 Latent Heat of Vaporization: Currently not available
- 9.13 Heat of Combustion: Not pertinent
- 9.14 Heat of Decomposition: Currently not available
- 9.15 Heat of Solution: At 25°C -108 Btu/lb = -60.1 cal/g = -2.52 X 10⁵ J/kg
- 9.16 Heat of Polymerization: Not pertinent
- 9.17 Heat of Fusion: 44.2 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
	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
40	76.089		N O T		N O T		N O T
50	79.950		P E R T I N E N T		P E R T I N E N T		P E R T I N E N T
60	84.007						
70	88.268						
80	92.747						
90	97.452						
100	102.398						
110	107.592						
120	113.051						
130	118.787						
140	124.815						
150	131.147						
160	137.801						
170	144.792						
180	152.139						
190	159.858						
200	167.969						
210	176.491						