SODIUM CHLORATE

SDC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid crystals or powder Colorless to pale yellow Odorless Sinks and mixes with water.

Avoid contact with solid.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	Not flammable. CONTAINERS MAY EXPLODE IN FIRE. May cause fire on contact with combustibles. Combat adjacent fires from a safe distance or protected location. Flood discharge area with water. Cool exposed containers with water. Continue cooling after fire has been extinguished.
Exposure	CALL FOR MEDICAL AID. SOLID Irritating to skin and eyes. Harmful if swallowed. 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
Collection Systems: Dredge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $NaClO_3$
2.3 IMO/UN Designation: 5.1/1495
2.4 DOT ID No.: 1495
2.5 CAS Registry No.: 7775-09-9
2.6 NAERG Guide No.: 140
2.7 Standard Industrial Trade Classification: 52332

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Clean work clothing (must be washed well with water after each exposure); rubber gloves and shoes; where dusty, goggles and an approved dust respirator. Do NOT use oils, greases, or protective creams on skin.
3.2 Symptoms Following Exposure: Ingestion of a toxic dose (at least 1/2 oz.) leads to severe gastroenteric pain, vomiting, and diarrhea. Possible respiratory difficulties, including failure of respiration. Kidney and liver injury may also be produced. The lethal oral dose for an adult is approximately 15 gm. Contact with eyes causes irritation.
3.3 Treatment of Exposure: INGESTION: induce vomiting and follow with gastric lavage, saline cathartics, fluid therapy, and oxygen. EYES: wash thoroughly with 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 3; LD_{50} = 50 to 500 mg/kg
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: Prolonged exposure to solid or dust may irritate skin.
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 but supports combustion.
4.2 Flammable Limits in Air: Not pertinent
4.3 Fire Extinguishing Agents: Water
4.4 Fire Extinguishing Agents Not to Be Used: Fire blankets
4.5 Special Hazards of Combustion Products: In fire situations oxygen may be liberated and increase the intensity of the fire.
4.6 Behavior in Fire: Melts, then decomposes to give oxygen gas that increases the intensity of fire. Reacts explosively, either as a solid or a liquid, with all organic matter and some metals.
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: Chlorates are powerful oxidizing agents and can cause explosions when heated or rubbed with wood, organic matter, sulfur, and many metals. Even water solutions react in this way if stronger than 30%, especially when warm.
5.3 Stability During Transport: Starts at 572°F with evolution of oxygen gas. Decomposition may be self-sustaining. Oxygen increases intensity of fires.
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: 11,000 ppm/perch/threshold toxicity/fresh water
3.8 ppm/scenedesmus/threshold toxicity/fresh water
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): None
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 0
Human Oral hazard: 2
Human Contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical (99.5% minimum); treated (99.0% minimum)
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open
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: II
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification	
Health Hazard (Blue).....	0	1
Flammability (Red).....	0	0
Instability (Yellow).....	2	2
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: 106.45
9.3 Boiling Point at 1 atm: Decomposes
9.4 Freezing Point: 478°F = 248°C = 521°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 2.49 at 15°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: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Currently not available

NOTES

SODIUM CHLORATE

SDC

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
34	80.209		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT
36	81.429						
38	82.650						
40	83.879						
42	85.099						
44	86.320						
46	87.540						
48	88.759						
50	89.990						
52	91.209						
54	92.429						
56	93.650						
58	94.879						
60	96.099						
62	97.320						
64	98.540						
66	99.759						
68	101.000						
70	102.200						
72	103.400						
74	104.700						
76	105.900						
78	107.099						
80	108.299						
82	109.500						
84	110.799						