

SODIUM CHLORATE SOLUTION

SDD

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Chlorate of soda Soda chloric acid, sodium salt		Liquid	Colorless to pale yellow	Odorless
		Mixes with water.		
KEEP PEOPLE AWAY. AVOID CONTACT WITH LIQUID. Wear self-contained positive pressure breathing apparatus and full protective clothing. Notify local health and pollution control agencies. Protect water intakes.				
Fire	Not flammable; but can support combustion, especially if heated to dryness. May cause fire on contact with combustibles. Wear self-contained positive pressure breathing apparatus and full protective clothing. Extinguish small fires: dry chemical, CO ₂ , water spray or foam; large fires: water spray, fog or foam. Move container from fire area if you can do it without risk.			
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin, eyes and mucous membranes. Harmful if swallowed. IF IN EYES OR ON SKIN, flush with running water for at least 15 min.; hold eyelids open if necessary. Wash skin with soap and water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk and 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:** 0; Unassigned cargoes
2.2 **Formula:** NaClO₂
2.3 **IMO/UN Designation:** 5.1/2428
2.4 **DOT ID No.:** 2428
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:** Wear self-contained positive pressure breathing apparatus and full protective clothing.
3.2 **Symptoms Following Exposure:** Contact causes irritation of eyes and skin. INGESTION: May cause nausea, vomiting, diarrhea, abdominal or gastric pain, dyspnea and other symptoms. The major cause of death from a lethal dose is acute renal failure.
3.3 **Treatment of Exposure:** EYES OR SKIN: Flush with running water for at least 15 min.; hold eyelids open if necessary. Wash skin with soap and water. INGESTION: If victim is CONSCIOUS, have victim drink water or milk and induce vomiting. IF UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.
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; LD₅₀ = 1.2 g/kg (rat)
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** May cause mutagenic effects.
3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available
3.11 **Liquid or Solid Characteristics:** Irritating to eyes and skin.
3.12 **Odor Threshold:** Currently not available
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 can support combustion, especially if dried.
4.2 **Flammable Limits in Air:** Not pertinent
4.3 **Fire Extinguishing Agents:** Small fires: dry chemical, CO₂, water spray or foam; large fires: water spray, fog or foam.
4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
4.5 **Special Hazards of Combustion**
Products: May contain oxygen (increase fire intensity) along with toxic chloride and sodium oxide fumes.
4.6 **Behavior in Fire:** Evaporation of water produces concentrated solutions or the dry salt. They can decompose to produce oxygen gas which increases fire intensity, and they can form explosive mixtures with organic matter and other easily oxidizable materials that are readily ignited by heat.
4.7 **Auto Ignition Temperature:** Not pertinent
4.8 **Electrical Hazards:** Not pertinent
4.9 **Burning Rate:** Not pertinent
4.10 **Adiabatic Flame Temperature:** Not pertinent
4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
4.12 **Flame Temperature:** Not pertinent
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 mixed or heated with organic matter and many metals. Even water solutions react in this way if stronger than 30%, especially when warm.
5.3 **Stability During Transport:** Stable
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
308 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:** 50% or less
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Open
7.5 **IMO Pollution Category:** III
7.6 **Ship Type:** 3
7.7 **Barge Hull Type:** 3

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:** 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:** 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:** Currently not available
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** Currently not available
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:** Not pertinent
9.19 **Reid Vapor Pressure:** Not pertinent

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
	C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E

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
	M I S C I B L E		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