

Material Safety Data Sheet

Sodium chlorate

ACC# 01472

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium chlorate

Catalog Numbers: AC223220010, AC223220050, S75208, S80176, S801761, S268-500

Synonyms:

Company Identification:

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7775-09-9	Sodium chlorate	99+	231-887-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white crystals.

Danger! Explosive when mixed with combustible material. Strong oxidizer. Contact with other material may cause a fire. Causes eye, skin, and respiratory tract irritation. May be harmful if swallowed. May cause kidney damage. May cause methemoglobinemia.

Target Organs: Blood, kidneys.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation.

Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed. May cause systemic effects by ingestion: blood hemolysis with or without anemia, methemoglobinemia-carboxyhemoglobinemia, and pulmonary changes. May cause damage to the red blood cells. May cause nausea, vomiting, and diarrhea, possibly with blood.

Inhalation: Causes respiratory tract irritation. May cause acute pulmonary edema, asphyxia, chemical pneumonitis, and upper airway obstruction caused by edema.

Chronic: May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death. Laboratory experiments have resulted in mutagenic effects. May cause kidney damage.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood.

Antidote: Do not use oils, greases or protective cream on skin. Do NOT use oils or ointments in eye.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire. Use water with caution and in flooding amounts. May accelerate burning if involved in a fire.

Extinguishing Media: Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out. Use water fog only.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 1; Flammability: 0; Instability: 1; Special Hazard: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Remove all sources of ignition. Do not use combustible materials such as paper towels to clean up spill. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid contact with clothing and other combustible materials. Avoid ingestion and inhalation. Inform laundry personnel of contaminant's hazards.

Storage: Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from reducing agents.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium chlorate	none listed	none listed	none listed

OSHA Vacated PELs: Sodium chlorate: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: white

Odor: odorless

pH: 5.0-7.0 (aq soln)

Vapor Pressure: Not applicable.

Vapor Density: Not applicable.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Decomposes

Freezing/Melting Point: 248 deg C

Decomposition Temperature: 148 deg C

Solubility: Soluble.

Specific Gravity/Density: 2.4900

Molecular Formula: NaClO₃

Molecular Weight: 106.44

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Ignition sources, dust generation, excess heat.

Incompatibilities with Other Materials: Reducing agents, acids, alcohols, aluminum, amines, ammonia, phosphorus, steel, sulfuric acid, cyanides (e.g. potassium cyanide, sodium cyanide), sulfides (inorganic, e.g. ferric sulfide, lead sulfide, sodium sulfide), arsenic, carbon, arsenic trioxide, sodium phosphinate, charcoal, ammonium salts, metal powders, organic materials, thiocyanates, peat, sawdust, urotropine, thiuram, cyanoborane oligomer, alkenes + potassium osmate, grease, leather, 1,3-bis (trichloromethylbenzene) + heat, ammonium sulfate, magnesium oxide, potassium cyanide.

Hazardous Decomposition Products: Chlorine, irritating and toxic fumes and gases, oxygen, sodium oxide, chlorine dioxide, which may be spontaneously explosive.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 7775-09-9: FO0525000

LD50/LC50:

CAS# 7775-09-9:

Draize test, rabbit, eye: 10 mg Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, rat: LC50 = >28 gm/m³/1H;
Oral, mouse: LD50 = 3600 mg/kg;
Oral, rabbit: LD50 = 7200 mg/kg;
Oral, rat: LD50 = 1200 mg/kg;
Skin, rabbit: LD50 = >10 gm/kg;

Estimated oral lethal dose for adult human is 210-430 mg/kg.

Carcinogenicity:

CAS# 7775-09-9: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: DNA Inhibition: Oral, rat = 84 mg/kg/12W (Continuous).

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 42000 mg/L; 24 Hr; UnspecifiedFish: Channel catfish: LC50 = 3157 mg/L; 24 Hr;

UnspecifiedFish: Harlequin fish: LC50 = 8600 mg/L; 24 Hr; Static and flow-through bioassay No data available.

Environmental: Sodium chlorate is soluble in water to 75% and is most persistent in areas of low rainfall where it may remain as long as 5 years.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	SODIUM CHLORATE	SODIUM CHLORATE
Hazard Class:	5.1	5.1
UN Number:	UN1495	UN1495
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7775-09-9 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7775-09-9: delayed, fire, reactive.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7775-09-9 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN O N

Risk Phrases:

R 22 Harmful if swallowed.
R 9 Explosive when mixed with combustible material.
R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 13 Keep away from food, drink and animal feeding stuffs.
S 17 Keep away from combustible material.
S 46 If swallowed, seek medical advice immediately and show this container or label.
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 7775-09-9: 2

Canada - DSL/NDSL

CAS# 7775-09-9 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D1B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 7/16/1999

Revision #4 Date: 6/30/2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.