

MATERIAL SAFETY DATA SHEET**SODIUM CHLORATE**

PRODUCT CODE NUMBER(S): 7510-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** Sodium chlorate; Chloric acid, sodium salt: Chlorate of soda**Chemical Family:** Chloric acid salt**Chemical Formula:** NaClO₃**Product Use:** Laboratory reagent**Manufacturer's Name and Address:**Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9**Telephone No:** (905) 877-0101**Fax No:** (905) 877-6666**Emergency Telephone No:** CANUTEC (613) 996-6666**HAZARDOUS INGREDIENTS OF MATERIALS**

Ingredients	%	TLV Units	CAS No.
Sodium chlorate	>99	Not established	7775-09-9

PHYSICAL DATA**Physical State:** Solid**Odour and Appearance:** White or colourless crystals or granules, odourless.**Odour Threshold (ppm):** Not applicable**Vapour Pressure (mm Hg):** Zero**Vapour Density (Air = 1):** Not applicable**Evaporation Rate:** Not applicable**Boiling Point (degrees C):** 265°C (decomposes)**Melting Point (degrees C):** 248°C**pH:** Neutral (aqueous)**Specific Gravity:** 2.490**Coefficient of Water/Oil distribution:** Not available**SHIPPING DESCRIPTION****UN:** 1495**T.D.G. Class:** 5.1**Pkg. Group:** II**REACTIVITY DATA****Chemical Stability:** Stable at normal temperature and pressure. Slightly hygroscopic. May undergo violent chemical change at elevated temperature and pressure..**Incompatibility with other substances:** Mixtures with combustible or flammable materials may ignite readily, explode, or be sensitive to shock or friction. May burn vigorously with phosphorus. Acidic solutions of sodium chlorate are strong oxidizing agents. Mixtures with metal salts, especially copper, may decompose violently. Mixtures with finely divided metals may be explosive. Reaction with metal oxides above 70°C releases oxygen and may be explosive. Fusion with metal cyanides will explode. Mixtures with ammonium salts, powdered metals, arsenic trioxide, phosphorus, silicon, sulphur or sulphides are easily ignited and may explode. Mixtures with sulphuric acid will explode.*Mixtures with organic materials (wood, paper, leather, flour, sawdust, sugar) may be ignited by static sparks, friction or shock.***Reactivity:** Avoid elevated temperatures and pressure, shock or friction. Avoid all incompatible, organic, and combustible materials. Avoid generation of dust.**Hazardous Decomposition Products:** O₂, ClO₂**FIRE AND EXPLOSION DATA****Flammability:** Not combustible, does not burn, but substance is a strong oxidiser and will enhance the burning rate or cause spontaneous combustion of organic or combustible material. Strong oxidants may explode when shocked or if exposed to heat, flame or friction. May be initiation source for dust or vapour explosions.**Extinguishing Media:** DO NOT use dry chemical fire extinguishing agents containing ammonium compounds (some A:B:C agents), (form explosive compounds). DO NOT use carbon dioxide, dry chemical powder or other extinguishing agents that smother flames; not effective for extinguishing fires with oxidizers. Use flooding amounts of water as spray or fog to blanket fire, cool exposed containers, and to flush solid or vapours away from fire. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (full face-piece, positive-pressure self-contained breathing apparatus) and clothing sufficient to prevent inhalation of dusts or vapours, and contact with skin and eyes.**Flash Point (Method Used):** Not applicable.**Autoignition Temperature:** Not applicable.**Upper Flammable Limit (% by volume):** Not applicable.**Lower Flammable Limit (% by volume):** Not applicable.**Hazardous Combustion Products:** O₂, ClO₂**Sensitivity to Impact:** Sensitivity of pure compound not known. When contaminated with dry organic or other incompatible materials, can explode violently on impact.**Sensitivity to Static discharge:** Not sensitive if pure. Mixtures of dust with air may be sensitive if contaminated with organic materials, when exposed to electrostatic or other high-voltage spark, or other ignition source.**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** (oral, rat) 1,200 mg/kg; (adult, human, est.) 210-430 mg/kg; (dermal, rabbit) >10 g/kg**LC₅₀:** (rat) >28 gm/m³/1h**Effects of Acute Exposure to Product:****Inhaled:** Does not form a vapour. No specific human or animal inhalation information available. Dust is unlikely to be inhaled since it absorbs moisture from the air and forms a pasty solid. Airborne dust or mists may cause mild, temporary irritation of nose and throat, with coughing and sneezing.**In contact with skin:** No human information available. Based on animal information solid or concentrated solution may cause mild temporary irritation.

CODE: 7510-1

In contact with eyes: No human information available. Based on limited animal information, dusts or mists may cause mild, temporary irritation, redness, tearing, and pain.

Ingested: Toxic. Causes nausea, vomiting, abdominal pain, diarrhea. May cause severe intestinal bleeding, destruction of red blood cells, formation of inactive hemoglobin (methemoglobinemia). May cause kidney damage or failure, with bloody urine, and then cessation of urination. May cause liver damage, laboured breathing, convulsions, coma. Estimated human adult lethal dose is 10 to 30 g, but death has occurred at as little as 7.5 g, and recovery has been effected after a dose of over 40 g (with vigorous treatment). Recovery from non-lethal dose may take several weeks and may not be complete.

Effects of Chronic Exposure to Product:

Prolonged or repeated skin exposure may cause dermatitis. Prolonged or repeated inhalation or ingestion may cause abdominal pain, internal bleeding, hemolytic anemia, lung damage causing edema and cyanosis, liver damage causing jaundice, kidney damage causing bloody urine.

Carcinogenicity: No human or animal information available.

Teratogenicity: No human information available. No significant effects in one animal study

Reproductive Effects: Nohuman information available. No effects in one animal study

Mutagenicity: No human information available. Some effects demonstrated in testing with rats..

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust ventilation required

Respiratory Protection: Dust mask. For dusty conditions, NIOSH approved half-face dust/mist respirator or high efficiency particulate respirator; higher or unknown concentrations, as in fire or spill conditions, positive-pressure, full face-piece self-contained breathing apparatus.

Eye Protection: Chemical safety goggles and/or face shield.

Skin Protection: Chemical resistant gloves. Other chemical resistant protective clothing, sleeves, apron, coverall, boots, sufficient to prevent contact.

Other Personal Protective Equipment: Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure: Evacuate area. Eliminate all sources of ignition. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Do not touch spilled material. Remove all sources of ignition and all combustible material. Use non-sparking tools. Cleanup personnel must be thoroughly trained in the handling of hazardous chemicals, and must wear protective equipment and clothing sufficient to prevent inhalation of dust or mists and contact with skin and eyes. Wet if necessary to reduce dust, mix with inert adsorbent (not sawdust) and transfer carefully into container for disposal. Handle contaminated material with the same caution as you do the chemical itself. Site of spillage should be washed thoroughly to remove all traces of oxidant.

Waste Disposal: Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment: OXIDIZER, TOXIC, IRRITANT. Workers using this chemical must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective clothing and equipment. Keep away from combustible or organic materials, and all sources

of ignition. Use non-sparking tools. Avoid contact and inhalation of dust or mist. Do not shock. Use the smallest possible amount for the purpose, in designated areas with adequate ventilation. Keep work area clean and free of extraneous, particularly combustible, materials. Keep containers closed when not in use and when empty. Empty containers may contain hazardous residues; treat with caution. Wash thoroughly after handling.

Storage Requirements: Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight and away from incompatible, combustible or organic materials. DO NOT SHOCK. Storage facilities (shelves, floors) should be constructed of non-combustible materials. Keep away from all ignition sources. Keep containers tightly closed when not in use and when empty. Protect from damage, and inspect frequently for signs of leaking; unattended spillage onto combustible materials (wood, paper, etc.) could result in fire.

FIRST AID MEASURES

Specific Measures:

Eyes: Do not allow victim to rub eyes. Immediately flush eyes with gently running water for at least five (5) minutes, or until no trace of chemical remains, holding eyelids open during flushing. If irritation persists, get medical attention.

Skin: Remove contaminated clothing, including watches, rings, belts, and shoes, under running water. Flush affected areas with soap and running water for at least five (5) minutes, or until no trace of chemical remains. If irritation persists, obtain medical advice. Decontaminate clothing completely before reuse, or discard. Clothing contaminated with oxidizing material can be dangerously and/or spontaneously flammable.

Inhalation: Move victim to fresh air. Give oxygen and get medical attention for any breathing difficulty.

Ingestion: If victim is alert and NOT convulsing, give 1 to 2 glasses of water to drink to dilute material. DO NOT induce vomiting. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Obtain medical attention immediately.

REFERENCES USED

CCINFO disc: Cheminfo

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Sax; Dangerous Properties of Industrial Materials, 5th ed., 1979
Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: July 15, 1991

Revision: June 2009

MSDS: 7510-1

Proposed WHMIS Designation: C; D1B

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
Caledon Laboratories Ltd. believes the information contained herein is reliable and accurate. Caledon makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such information is solely for your consideration, investigation, and verification.