

**MATERIAL SAFETY DATA SHEET****SODIUM CARBONATE**

PRODUCT CODE NUMBER(S): 7480-1, 7520-1, 7523-1

**PRODUCT IDENTIFICATION****Chemical Name and Synonyms:** Sodium carbonate; Carbonic acid, disodium salt; Disodium carbonate; Soda ash**Chemical Family:** Carbonates**Chemical Formula:**  $\text{Na}_2\text{CO}_3$  and  $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ **Product Use:** Laboratory chemical**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 carbonate anhydrous	>99	10 mg/m <sup>3</sup>	497-19-8
OR			
Sodium carbonate monohydrate	>99	10 mg/m <sup>3</sup>	5968-11-6

**PHYSICAL DATA****Physical State:** Solid**Odour and Appearance:** White to grey crystals, powder, or lumps, odourless**Odour Threshold (ppm):** Not applicable**Vapour Pressure (mm Hg):** Negligible**Vapour Density (Air = 1):** Not applicable**Evaporation Rate:** Not applicable**Boiling point:** Not available**Melting Point (degrees C):** 851°C (anhydrous); 100°C (monohydrate)**pH:** 11.4 (1% solution) @ 25°C**Specific Gravity:** 2.53 (anhydrous); 2.25 (monohydrate)**Coefficient of Water/Oil distribution:** Not available**Solubility in water:** 17-33 g/100 mL @ 20°C**SHIPPING DESCRIPTION****UN:** Not regulated**T.D.G. Class:** Not regulated**Pkg. Group:** Not regulated**REACTIVITY DATA****Chemical Stability:** Stable, hygroscopic. Absorbs moisture and carbon dioxide from air to form sodium bicarbonate.**Incompatibility with other substances:** Slowly decomposes at 400°C, forming sodium oxide and carbon dioxide.

Reacts with water vapour above 400°C to form sodium hydroxide and carbon dioxide. Reaction with acids may be violent, generating heat and carbon dioxide gas. Reacts with calcium hydroxide, or calcium oxide in the presence of moisture, to form caustic soda (NaOH) which may cause burns. Mixtures with magnesium, phosphorus pentoxide, aluminum if the metal is red hot, will explode. Mixtures with ammonia and silver nitrate explode when warmed. Ignites and burns fiercely with lithium. Burning lithium releases reactive sodium on contact. 1% sodium carbonate reduces the explosion temperature of 2,4,6-trinitrotoluene. Corrodes aluminum and lead at room temperature. Not corrosive to steel, iron, copper, or nickel, although at temperatures >1200°C can attack iron, copper, nickel. Solutions are corrosive to aluminum, lead, zinc, zinc brasses. Solutions attack some forms of plastics, and coatings.

**Reactivity:** Avoid excessive heat, ignition sources, moisture, all incompatible materials, generation of dust.**Hazardous Decomposition Products:** CO<sub>2</sub>**FIRE AND EXPLOSION DATA****Flammability:** Not combustible. Closed containers may rupture violently in heat of fire.**Extinguishing Media:** Use extinguishing media appropriate to the surrounding fire. Water in flooding amounts can be used to cool containers, prevent dust formation, flush chemical away from fire. Fight fire from upwind, from a safe distance. Firefighters should wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes 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:** CO<sub>2</sub>, toxic and irritating vapours.**Sensitivity to Impact:** None identified**Sensitivity to Static discharge:** None identified**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD<sub>50</sub>:** (oral, rat) 4,090 mg/kg**LC<sub>50</sub>:** (male rat) 1,150 mg/m<sup>3</sup>/4h (aerosol, 91%); (rat) 2,300 mg/m<sup>3</sup>/2h**Effects of Acute Exposure to Product:****Inhaled:** No human information available; animal studies indicate it to be irritating to tissue of upper respiratory tract. May cause sore throat, coughing, sneezing, shortness of breath.**In contact with skin:** Human and animal information indicates not irritating or only mildly irritating to skin.**In contact with eyes:** Lacrymator. No human information available; animal studies indicate it to cause moderate to se-

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vere irritation to eye tissue, causing redness, tearing, blurring of vision.

**Ingested:** No human information available; animal studies indicate low toxicity by ingestion. May cause gastrointestinal irritation, nausea, vomiting, diarrhea.

**Effects of Chronic Exposure to Product:**

Prolonged or repeated skin contact may produce dermatitis, or "soda ulcers" on hands. Prolonged or repeated inhalation may cause thinning or perforation of the nasal septum.

**Carcinogenicity:** Not classifiable as carcinogenic.

**Teratogenicity:** No human information available; some effects in animal studies

**Reproductive Effects:** No human or animal information available

**Mutagenicity:** No information available

**Synergistic Products:** None known

## PREVENTIVE MEASURES

**Engineering Controls:** Local exhaust ventilation to control dust.

**Respiratory Protection:** Dust/mist mask. Up to 10x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH/OSHA approved half-face dust/mist filter respirator. Up to 50x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH/OSHA approved full face-piece dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.

**Eye Protection:** Chemical safety goggles or face shield. Do not wear contact lenses when working with chemicals.

**Skin Protection:** Wear natural or nitrile rubber, or neoprene gloves. Other protective clothing, long sleeves, apron, coveralls, boots. sufficient to prevent contact.

**Other Personal Protective Equipment:** Eye wash and safety shower in work area.

**Leak and Spill Procedure:** Ventilate area of spill.

Clean-up personnel should wear protective equipment and clothing sufficient to prevent inhalation of dusts or vapours and contact with skin and eyes. Mix with inert absorbent, gather up and place in suitable containers for reclamation or disposal. Solutions may be diluted and neutralized carefully, with dilute acetic or hydrochloric acid. Prevent from entering sewers or waterways. Flush site of spill thoroughly with copious amounts of water.

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

**Handling Procedures and Equipment:** IRRITANT, CORROSIVE TO METALS. Workers using this material must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Follow routine safe handling procedures and good housekeeping procedures; keep work area free of extraneous materials. Use the smallest amount possible for the purpose, in designated areas with adequate ventilation. Avoid all contact with skin, eyes, and clothing and inhalation of mists or vapours. Wash thoroughly after handling. Empty containers may contain hazardous residues; treat with caution.

**Storage Requirements:** Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight and away from incompatible materials. Keep containers tightly closed when not in use and when empty. Protect from damage and inspect frequently for signs of damage or leaking.

**Environmental Effects:** Aquatic Toxicity (96 hr TLM):  
*Daphnia Magna*: 500 ppm; *Lepomis Macrochirus*: 300 ppm

## FIRST AID MEASURES

**Specific Measures:**

**Eyes:** Flush with running water for at least twenty (20) minutes, or until all traces of chemical are removed, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Get medical attention immediately.

**Skin:** Remove contaminated clothing. Brush or wipe off dry material. Flush skin with plenty of running water until no evidence of chemical remains. Get medical attention if irritation develops.

**Inhalation:** Remove to fresh air. Give oxygen and get medical attention for breathing difficulty.

**Ingestion:** If victim is alert and NOT convulsing, rinse mouth, give several glasses of water to drink to dilute. If discomfort occurs, or if a large amount has been ingested, get medical attention.

## 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:** February 23, 1989

**Revision:** April 2011

**MSDS:** 7480-1, 7520-1, 7523-1

**Proposed WHMIS Designation:** D2B

Prepared by: Caledon Laboratories Ltd. (905) 877-0101  
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