

## SODIUM BICARBONATE

**PRODUCT IDENTIFICATION**

**Chemical Name and Synonyms:** Sodium bicarbonate; Baking soda; Bicarbonate of soda; Sodium hydrogen carbonate  
**Chemical Family:** Inorganic sodium salt  
**Chemical Formula:** NaHCO<sub>3</sub>  
**Product Use:** Laboratory reagent  
**Manufacturers 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 bicarbonate, > 99, Not established, 144-55-8

**PHYSICAL DATA**

**Physical State:** Solid  
**Odour and Appearance:** White crystalline powder or granules. Odourless  
**Odour Threshold (ppm):** Not applicable.  
**Vapour Pressure (mm Hg):** Negligible  
**Vapour Density (Air = 1):** Not applicable.  
**Evaporation Rate:** Not applicable.  
**Boiling Point (degrees C):** Does not boil; decomposes  
**Melting Point (degrees C):** Begins to lose CO<sub>2</sub> at 50 °C; converted to sodium carbonate at 100 °C  
**pH:** 8.6 (1 % aqueous solution). Alkalinity increases as solution stands, is agitated, or heated.  
**Specific Gravity:** 2.159  
**Coefficient of Water/Oil distribution:** Not available.

**SHIPPING DESCRIPTION**

**UN:** Not regulated.  
**T.D.G. Class:** Not regulated.  
**Pkg. Group:** Not regulated.

**REACTIVITY DATA**

**Chemical Stability:** Normally stable; in moist air, slowly decomposes and loses CO<sub>2</sub>.  
**Incompatibility with other substances:** May react violently with acids, generating heat and carbon dioxide. Reacts with monoammonium phosphate to release ammonia, CO<sub>2</sub>. Reacts violently with sodium-potassium alloy. Mixtures with 2-furaldehyde in air may ignite spontaneously. Not corrosive to stainless steel, or nickel and its alloys.  
**Reactivity:** Avoid excessive heat, all incompatible materials, generation of dust. Avoid moisture; material will cake.  
**Hazardous Decomposition Products:** CO<sub>2</sub> Sodium carbonate.

**FIRE AND EXPLOSION DATA**

**Flammability:** Not combustible. Will not burn or support combustion.  
**Extinguishing Media:** Use any means suitable for surrounding fire. Closed containers may rupture if heated. Use water in flooding amounts to cool containers, and disperse toxic vapours. Fight fire from a safe distance and from upwind. Fire fighters should wear protective equipment (positive-pressure self-contained breathing apparatus) and full Bunker Gear.

**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> is released when material is heated.  
**Sensitivity to Impact:** None

**TOXICOLOGICAL PROPERTIES AND HEALTH DATA**

**Toxicological Data:**  
**LD50:** (oral, rat) 4,220 mg/kg (20 %, aqueous); 5,820 mg/kg (50 %, aqueous)  
**LC50:** Not available.  
**Effects of Acute Exposure to Product:**  
**Inhaled:** No human or animal information available. Inhalation of dust may cause mild transitory irritation of upper respiratory tract with wheezing, coughing, and shortness of breath.  
**In contact with skin:** Not irritating to unbroken skin. May cause mild, temporary irritation on broken skin.  
**In contact with eyes:** No human information available. Animal testing show that contact may cause mild, temporary mechanical irritation, redness, tearing, and pain.  
**Ingested:** Animal testing indicates low oral toxicity. Extremely large oral doses may cause gastrointestinal disturbances and alkalosis. Ingestion is not a typical route of industrial exposure.  
**Effects of Chronic Exposure to Product:** Prolonged or repeated inhalation may cause increased mucous flow which will disappear if exposure is stopped.  
**Carcinogenicity:** Not listed as a carcinogen by NTP, IARC or OSHA.  
**Teratogenicity:** No human information available. Some effects reported in animal studies (RTECS No. VZ0950000).  
**Reproductive Effects:** No human or animal information available.  
**Mutagenicity:** No human information available. No effects reported in bacteria and yeast cell test. Some effects in animal testing.  
**Synergistic Products:** None known.

**PREVENTIVE MEASURES**

**Engineering Controls:** Local exhaust ventilation.  
**Respiratory Protection:** Dust/mist mask. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH/MSHA approved half-face high-efficiency dust/mist filter respirator, or NIOSH/MSHA approved full face-piece high-efficiency 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 glasses. Do not wear contact lenses when working with chemicals.  
**Skin Protection:** Rubber gloves. Other protective clothing as required to minimize contact.  
**Other Personal Protective Equipment:** Safety shower and eye wash fountain readily available in work area.

**Leak and Spill Procedure:** Ventilate area of spill. If spill is large, and dust is present, clean-up personnel should be trained in the handling of hazardous materials, and should wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Dampen material and collect into suitable containers for disposal. Wash area of spill thoroughly with water.

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

**Handling Procedures and Equipment:** Workers using this chemical should be properly trained in its hazards and its safe use, and should wear appropriate protective equipment and clothing. Keep work areas free of incompatible materials. Use the smallest amount possible for the purpose in a designated area with adequate ventilation. Avoid generating dusts. AVOID ALL CONTACT AND INHALATION. Keep containers closed when not in use.

**Storage Requirements:** Store in a suitable, labelled containers, in a cool, dry, well-ventilated place out of direct sunlight and away from incompatible materials. Keep containers tightly closed.

#### FIRST AID MEASURES

**Specific Measures:**

**Eyes:** Flush eyes thoroughly with gently running water, holding eyelids open while flushing, for five to ten (5 to 10) minutes, or until no trace of chemical remains. If irritation persists, get medical attention.

**Skin:** Remove contaminated clothing. Brush or wipe off dry material. Wash skin with plenty of running water until no evidence of chemical remains. If irritation persists, get medical attention.

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

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

**CCINFO disc:** MSDSs, April 2007

**Sax, Lewis:** Hawleys Condensed Chemical Dictionary, 11th ed., 1987

**Suppliers Material Safety Data Sheets:**

#### ADDITIONAL INFORMATION

**Date Issued:** 20-Feb-90

**Revision:** Apr 2013

**Proposed WHMIS Designation:** Not controlled. Not required to be updated every three years (WHMIS 1992, B-40, Section 29.2).

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