

MATERIAL SAFETY DATA SHEET

SODIUM CARBONATE / SODA ASH, SOLID

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Brenntag Canada Inc.
43 Jutland Rd.
Toronto, ON
M8Z 2G6
(416) 259-8231

WHMIS#: 00060696
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Website: <http://www.brenntag.ca>

EMERGENCY TELEPHONE NUMBERS (FOR EMERGENCIES INVOLVING CHEMICAL SPILLS OR RELEASE)

Toronto, ON (416) 226-6117
Edmonton, AB (780) 424-1754

Montreal, QC (514) 861-1211
Calgary, AB (403) 263-8660

Winnipeg, MB (204) 943-8827
Vancouver, BC (604) 685-5036

PRODUCT IDENTIFICATION

Product Name: Sodium Carbonate / Soda Ash, Solid.
Chemical Name: Carbonic acid, disodium salt.
Synonyms: Disodium Carbonate; Solvay Soda; Bisodium Carbonate; Soda Monohydrate; Calcined Soda; pH + Soda Ash.
Chemical Family: Sodium salts.
Molecular Formula: Na₂CO₃.
Product Use: Photography. Water treatment. pH control of water. Chemical intermediate.

WHMIS Classification / Symbol:

D-2B: Toxic (eye irritant)
E: Corrosive



READ THE ENTIRE MSDS FOR THE COMPLETE HAZARD EVALUATION OF THIS PRODUCT.

2. COMPOSITION, INFORMATION ON INGREDIENTS (Not Intended As Specifications)

| <i>Ingredient</i> | <i>CAS#</i> | <i>ACGIH TLV</i> | <i>% Concentration</i> |
|-------------------|-------------|------------------|------------------------|
| Sodium Carbonate | 497-19-8 | --- | 99 - 100 |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Causes eye irritation. Sodium Carbonate is corrosive to aluminum. Dust is irritating to respiratory tract. See "Other Health Effects" Section. Can decompose at high temperatures forming toxic gases.

POTENTIAL HEALTH EFFECTS

Inhalation: Product is irritating to the nose, throat and respiratory tract.

Skin Contact: This product may cause irritation. May cause more severe response if skin is abraded (scratched, scraped or cut). Prolonged, confined (especially under the finger nails, under rings or watch bands) or repeated exposure may cause skin irritation and possibly lead to (chemical) burns. Solid sodium carbonate is corrosive to aluminum but not to human tissue.

Skin Absorption: A single, prolonged skin exposure is not likely to result in the absorption of toxic amounts of the material.

Eye Contact: This product causes irritation, redness and pain and lachrymation (excessive tears).

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| Ingestion: | May irritate mouth, esophagus, and stomach. Ingestion of large amounts may cause nausea, gastrointestinal upset and abdominal pain. Ingestion is not a likely route of exposure. |
| Other Health Effects: | Effects (irritancy) on the skin and eyes may be delayed, and damage may occur without the sensation or onset of pain. Strict adherence to first aid measures following any exposure is essential. Sodium salts have a hypothetical risk of hypernatremia. Hypernatraemia is a term that describes an abnormally high plasma concentration of sodium ions. This condition may lead to weakness, restlessness, dizziness, headache, convulsions and coma. (4) In the presence of moisture (perspiration), soda ash and lime dusts (CaO) combine to form corrosive caustic soda which may cause burns. (3) |

4. FIRST AID MEASURES

FIRST AID PROCEDURES

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| Inhalation: | Move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Obtain medical attention IMMEDIATELY. |
| Skin Contact: | Start flushing while removing contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation, redness, or a burning sensation develops and persists, repeat flushing and obtain medical attention. |
| Eye Contact: | Immediately flush eyes with running water for a minimum of 20 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention IMMEDIATELY. |
| Ingestion: | Do not attempt to give anything by mouth to an unconscious person. If victim is alert and not convulsing, rinse mouth out and give 1/2 to 1 glass of water to dilute material. IMMEDIATELY contact local Poison Control Centre. Vomiting should only be induced under the direction of a physician or a poison control centre. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. IMMEDIATELY transport victim to an emergency facility. |
| Note to Physicians: | Treat symptomatically. Medical conditions that may be aggravated by exposure to this product include diseases of the skin, eyes or respiratory tract. |

5. FIRE-FIGHTING MEASURES

| <i>Flashpoint (°C)</i> | <i>Autolgnition Temperature (°C)</i> | <i>Flammability Limits in Air (%):</i> | |
|------------------------------------|---|--|-----------------|
| | | <i>LEL</i> | <i>UEL</i> |
| Not available. | Not applicable. | Not applicable. | Not applicable. |
| Flammability Class (WHMIS): | Not regulated. | | |
| Hazardous Combustion Products: | Thermal decomposition products are toxic and may include oxides of carbon, sodium and irritating gases. | | |
| Unusual Fire or Explosion Hazards: | Minimize air borne spreading of dust. In the presence of moisture (perspiration), soda ash and lime dusts (CaO) combine to form corrosive caustic soda which may cause burns. (3) | | |
| Sensitivity to Mechanical Impact: | Not expected to be sensitive to mechanical impact. | | |
| Rate of Burning: | Not available. | | |
| Explosive Power: | Not available. | | |
| Sensitivity to Static Discharge: | Not expected to be sensitive to static discharge. | | |

EXTINGUISHING MEDIA

Fire Extinguishing Media: Use media appropriate for surrounding fire and/or materials.

FIRE FIGHTING INSTRUCTIONS

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| Instructions to the Fire Fighters: | Isolate materials that are not involved in the fire and protect personnel. Use water spray to cool fire-exposed containers or structures. Use water spray to disperse vapours. Spilled material may cause floors and contact surfaces to become slippery. |
| Fire Fighting Protective Equipment: | Use self-contained breathing apparatus and protective clothing. |

6. ACCIDENTAL RELEASE MEASURES

Information in this section is for responding to spills, leaks or releases in order to prevent or minimize the adverse effects on persons, property and the environment. There may be specific reporting requirements associated with spills, leaks or releases, which change from region to region.

Containment and Clean-Up Procedures: See Section 13, "Deactivating Chemicals". In all cases of leak or spill contact vendor at Emergency Number shown on the front page of this MSDS.

Minimize air borne spreading of dust. Wear respirator, protective clothing and gloves. Avoid dry sweeping. Do not use compressed air to clean surfaces. Vacuuming or wet sweeping is preferred. Return all material possible to container for proper disposal. Do not allow to enter sewers or watercourses. Any recovered product can be used for the usual purpose, depending on the extent and kind of contamination. Where a package (drum or bag) is damaged and / or leaking, repair it, or place it into an over-pack drum immediately so as to avoid or minimize material loss and contamination of surrounding environment. Replace damaged containers immediately to avoid loss of material and contamination of surrounding atmosphere. For release to land, or storm water runoff, contain discharge by constructing dykes or applying inert absorbent; for release to water, utilize damming and/or water diversion to minimize the spread of contamination. Ventilate enclosed spaces. Notify applicable government authority if release is reportable or could adversely affect the environment.

7. HANDLING AND STORAGE

HANDLING

Handling Practices: Use normal "good" industrial hygiene and housekeeping practices. In the presence of moisture (perspiration), soda ash and lime dusts (CaO) combine to form corrosive caustic soda which may cause burns. (3)

Ventilation Requirements: See Section 8, "Engineering Controls".

Other Precautions: Use only with adequate ventilation and avoid breathing dusts. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Wash contaminated clothing thoroughly before re-use.

STORAGE

Storage Temperature (°C): See below.

Ventilation Requirements: Ventilation should be corrosion proof.

Storage Requirements: Store in a cool, dry and well-ventilated area. Keep away from heat, sparks and flames. Keep containers closed. Avoid moisture contamination. Prolonged storage may result in lumping or caking.

Special Materials to be Used for Packaging or Containers: Equipment for storage, handling or transportation should NOT be made of: aluminum, lead or tin. Attacks some types of rubber, plastics and coatings. Confirm suitability of any material before using.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Recommendations listed in this section indicate the type of equipment, which will provide protection against overexposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

ENGINEERING CONTROLS

Engineering Controls: General exhaust is acceptable. Local exhaust ventilation preferred. Ventilation should be corrosion and explosion proof. Make up air should be supplied to balance air that is removed by local or general exhaust ventilation.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye Protection: Safety glasses with side shields are recommended to prevent eye contact. Use dust-tight chemical safety goggles when there is potential for eye contact. Contact lenses should not be worn when working with this material.

Skin Protection: Gloves and protective clothing made from natural rubber, neoprene or natural rubber should be impervious under conditions of use. Prior to use, user should confirm impermeability.

Respiratory Protection: No specific guidelines available. A NIOSH/MSHA approved dust mask for concentrations of nuisance dust up to 100 mg/m³ particulate. An air-supplied respirator if concentrations are higher or unknown.

Other Personal Protective Equipment: Wear an impermeable apron and boots. Locate safety shower and eyewash station close to chemical handling area. Take all precautions to avoid personal contact.

EXPOSURE GUIDELINES

Particulate Not Otherwise Classified:

| ACGIH | OSHA |
|--|--|
| 10 mg/m ³ - Inhalable particulate | 50 mppcf* or 15 mg/m ³ - Total Dust |
| 3 mg/m ³ - Respirable particulate | 15 mppcf* or 5 mg/m ³ - Respirable Fraction |

* mppcf = million particles per cubic foot

9. PHYSICAL AND CHEMICAL PROPERTIES (Not intended as Specifications)

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| Physical State: | Solid. |
| Appearance: | White granular solid. |
| Odour: | Odourless |
| Odour Threshold (ppm): | Not applicable. |
| Boiling Range (°C): | Not applicable. |
| Melting/Freezing Point (°C): | 851. |
| Vapour Pressure (mm Hg at 20° C): | Not applicable. |
| Vapour Density (Air = 1.0): | Not applicable. |
| Relative Density (g/cc): | 2.509 - 2.564. |
| Bulk Density: | 950 - 1,035. |
| Viscosity: | Not applicable. |
| Evaporation Rate (Butyl Acetate = 1.0): | Not applicable. |
| Solubility: | Soluble in water. Hygroscopic (readily absorbs water). |
| % Volatile by Volume: | Not available. |
| pH: | 11.4 (1% solution). |
| Coefficient of Water/Oil Distribution: | Not available. |
| Volatile Organic Compounds (VOC): | Not applicable. |
| Flashpoint (°C): | Not available. |

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

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| Under Normal Conditions: | Stable. |
| Under Fire Conditions: | Not flammable. |
| Hazardous Polymerization: | Will not occur. |
| Conditions to Avoid: | High temperatures, sparks, open flames and all other sources of ignition. Minimize air borne spreading of dust. Clean up immediately to eliminate slipping hazard. Decomposition will occur above 400 °C. Hygroscopic. |
| Materials to Avoid: | Strong oxidizers. Lewis or mineral acids. Vigorous effervescence results on mixture with acids. Product can react explosively with: Magnesium, Sulphuric Acid, aluminum, lead, tin, Phosphorus Pentoxide. Silver Nitrate. Ammonia. Can react violently with red hot aluminum metal; fluorine gas; lithium and 2,4,6-trinitrotoluene. (3) Attacks some types of rubber, plastics and coatings. |
| Decomposition or Combustion Products: | Thermal decomposition products are toxic and may include oxides of carbon, sodium and irritating gases. |

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA:

| SUBSTANCE | LD50 (Oral, Rat) | LD50 (Dermal, Rabbit) | LC50 (Inhalation, Rat, 4h) |
|-----------------------|---|-----------------------|----------------------------|
| Sodium Carbonate | 4 090 mg/kg (1) | --- | --- |
| Carcinogenicity Data: | The ingredient(s) of this product is (are) not classed as carcinogenic by ACGIH, IARC, OSHA or NTP. See "Other Studies Relevant to Material". | | |
| Reproductive Data: | No adverse reproductive effects are anticipated. | | |
| Mutagenicity Data: | No adverse mutagenic effects are anticipated. | | |

| | |
|--|---|
| Teratogenicity Data: | No adverse teratogenic effects are anticipated. |
| Respiratory / Skin Sensitization Data: | None known. |
| Synergistic Materials: | None known. |
| Other Studies Relevant to Material: | Sodium Carbonate: Application of 100 mg (Standard Draize Test) resulted in moderate eye irritation after 24 hours. Application of 0.1 mL of Sodium Carbonate resulted in severe eye irritation. Application of 500 mg/24 hours to rabbit skin (Standard Draize Test) resulted in mild irritation. Male rats exposed to an aerosol of a 2 % solution of sodium carbonate for 4 hours/day, 5 days/week for 3.5 months showed no pronounced effects. Pregnant mice were orally intubated with up to 340 mg/Kg of aqueous sodium carbonate solution. No positive findings were reported. (4) Excessive contact may produce "soda ulcers" on hand and perforation of the nasal septum. Sensitivity reactions may occur from prolonged and repeated exposure. (3) |

12. ECOLOGICAL INFORMATION

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| Ecotoxicity: | Low acute toxicity to aquatic organisms. 96-hour LC50 (Daphnia magna) = 265 to 565 mg/L. 96-hour LC50 (Bluegill Sunfish) = 300 to 320 mg/L. |
| Environmental Fate: | Not available. Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers. |

13. DISPOSAL CONSIDERATIONS

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| Deactivating Chemicals: | Neutralize carefully with weak acid to a pH of 6 to 9. Neutralization is expected to be exothermic. Vigorous effervescence results. |
| Waste Disposal Methods: | This information applies to the material as manufactured. Reevaluation of the product may be required by the user at the time of disposal since the product uses, transformations, mixtures and processes may influence waste classification. Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local, provincial and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems. |
| Safe Handling of Residues: | See "Waste Disposal Methods". |
| Disposal of Packaging: | Empty containers retain product residue and may be hazardous. Treat package in the same manner as the product. Dispose of waste material at an approved waste incineration facility in accordance with applicable local, provincial and federal regulations. Do not re-use empty container. |

14. TRANSPORTATION INFORMATION

CANADIAN TDG ACT SHIPPING DESCRIPTION:

This product is not regulated by TDG.

Label(s): Not applicable. Placard: Not applicable.

ERAP Index: ----. Exemptions: None known.

US DOT CLASSIFICATION (49CFR 172.101, 172.102):

This product is not regulated by DOT.

Label(s): Not applicable. Placard: Not applicable.

CERCLA-RQ: Not available. Exemptions: None known.

15. REGULATORY INFORMATION

CANADA

CEPA - NSNR: This material is included on the DSL under the CEPA.

CEPA - NPRI: Not included.

Controlled Products Regulations Classification (WHMIS):

D-2B: Toxic (eye irritant)

E: Corrosive

USA

Environmental Protection Act: This material is included on the TSCA Inventory.

OSHA HCS (29CFR 1910.1200): Eye Irritant.

NFPA: Health, Fire, Reactivity (Not available.)

HMIS: 2 Health, 0 Fire, 0 Reactivity (3)

INTERNATIONAL

Sodium Carbonate is found on the following inventories: EINECS (European Inventory of Existing Commercial Chemical Substances), ACOIN (Australia), MITI (Japan) and Korea.

16. OTHER INFORMATION

REFERENCES

1. RTECS-Registry of Toxic Effects of Chemical Substances, Canadian Centre for Occupational Health and Safety RTECS database.
2. Clayton, G.D. and Clayton, F.E., Eds., Patty's Industrial Hygiene and Toxicology, 3rd ed., Vol. IIA,B,C, John Wiley and Sons, New York, 1981.
3. Supplier's Material Safety Data Sheet(s).
4. CHEMINFO, through "CCINFOdisc", Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada.
5. Guide to Occupational Exposure Values, 2007, American Conference of Governmental Industrial Hygienists, Cincinnati, 2007.
6. Regulatory Affairs Group, Brenntag Canada Inc.

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To obtain revised copies of this or other Material Safety Data Sheets, contact your nearest Brenntag Canada Regional office.

British Columbia: 20333-102B Avenue, Langley, BC, V1M 3H1
Phone: (604) 513-9009 Facsimile: (604) 513-9010

Alberta: 6628 - 45 th. Street, Leduc, AB, T9E 7C9
Phone: (780) 986-4544 Facsimile: (780) 986-1070

Manitoba: 681 Plinquet Street, Winnipeg, MB, R2J 2X2
Phone: (204) 233-3416 Facsimile: (204) 233-7005

Ontario: 43 Jutland Road, Toronto, ON, M8Z 2G6
Phone: (416) 259-8231 Facsimile: (416) 259-5333

Quebec: 2900 Jean Baptiste Des., Lachine, PQ, H8T 1C8
Phone: (514) 636-9230 Facsimile: (514) 636-0877

Atlantic: A-105 Akerley Boulevard, Dartmouth, NS, B3B 1R7
Phone: (902) 468-9690 Facsimile: (902) 468-3085

Prepared By: Regulatory Affairs Group, Brenntag Canada Inc., (416) 259-8231.