Sodium Carbonate, Anhydrous

Material Safety Data Sheet

Date Prepared: July 2005 Supercedes: June 2004

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the Canada's Workplace Hazards Materials Information System (WHMIS) and, the EC Directive, 2001/58/EC.

1. Product and Company Identification

Product Name Sodium Carbonate, Anhydrous

Alternate Product Name(s) Soda Ash, Disodium Carbonate
Also applicable for Soda Ash Light, Synthetic Light Soda Ash, Soda Ash Liquid

Chemical Formula Na_2CO_3

General Use Glass manufacture, detergent manufacture, sodium chemicals and carbonate chemicals manufacture, pulp and paper, brine treatment, water hardness removal, pH adjustment in water or waste water, flue gas desulfurization, coal treatment, ion exchange resin regeneration.

This chemical is certified to ANSI/NSF Standard 60, Drinking Water Chemicals – Health Effects (as packaged in the original, unopened container). Concentration not to exceed 100 ppm when used for corrosion control or scale control pH adjustment.

Manufacturer
General Chemical Industrial Products
120 Eagle Rock Avenue
East Hanover, NJ 07936

Emergency Telephone Numbers
(800) 424-9300 (CHEMTREC – US)
(613) 996-6666 (CANUTEC – Canada)
(973) 599-5500 (Corporate – New Jersey)

2. Composition / Information on Ingredients

Chemical Name	CAS #	Wt. %	EC No.	EC Class
Sodium Carbonate	497-19-8	99.8	207-838-8	Xi, R36

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

3. Hazards Identification

Emergency Overview:

- White, odorless, granular solid.
- Product is non-combustible.
- Reacts with acids to release carbon dioxide gas and heat.

- Irritating to the eyes. Inhalation of product may irritate nose, throat, and lungs. Prolonged contact may irritate skin. Although low in toxicity, ingestion may cause nausea, vomiting, stomachache, and diarrhea [LD_{50} (rat) = 2.8 gm/kg].
- Not expected to be toxic to the environment, nor to aquatic organisms.
- Avoid simultaneous exposure to soda ash and lime dust. In the presence of moisture (i.e. perspiration) the two materials combine to form caustic soda (NaOH), which may cause burns.

Potential Health Effects:

Direct contact with the product causes irritation of the eyes and continuous or prolonged contact may cause skin irritation (red, dry, cracked skin). Excessive levels of airborne dust may irritate the mucous membranes and upper respiratory tract.

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4. First Aid Measures

Eyes: Immediately flush with water for at least 15 minutes, lifting the upper and lower eyelids intermittently. See a medical doctor or ophthalmologist as necessary.

Skin: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

Ingestion: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

Inhalation: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, obtain medical attention.

Notes to Medical Doctor: while internal toxicity is low, irritant effects of high concentrations may produce corneal opacities, and vesicular skin reaxtions in humans with abraded skin only. Treatment is symptomatic and supportive.

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5. Fire Fighting Measures

Extinguishing Media: Not combustible, use extinguishing method suitable for surrounding fire.

Fire / Explosion Hazards: Not applicable.

Fire Fighting Procedures: Wear full protective clothing and self-contained breathing apparatus.

Flammable Limits: Not applicable.

Hazardous Combustion Products: Carbon dioxide.

Sensitivity to Impact: None

Sensitivity to Static Discharge: None

6. Accidental Release Measures

Personal Precautions: Refer to Section 8 “Exposure Controls / Personal Protection”

Containment: Prevent large quantities of this product from contacting vegetation or waterways; large spills could kill vegetation and fish.

Clean-up: This product, if spilled, can be recovered and re-used if contamination does not present a problem. Vacuum or sweep up the material. If the spilled product is unusable due to contamination, consult state or federal environmental agencies for acceptable disposal procedures and locations. See Section 13 “Disposal Considerations”.

Notification Requirements: Federal regulations do not require notification for spills of this product. State and local regulations may contain different requirements; consult local authorities.

7. Handling and Storage

Handling: Use air conveying / mechanical systems for bulk transfer to storage. For manual handling of bulk transfer use mechanical ventilation to remove airborne dust from railcar, ship or truck. Use approved respiratory protection when ventilation systems are not available. Selection of respirators is based on the dust cloud generation. Keep material out of lakes, streams, ponds and sewer drains.

Avoid eye contact or prolonged skin contact. Avoid breathing dusts. When dissolving, add to water cautiously and with stirring; solutions can get hot. Use good personal hygiene and housekeeping.

Storage: Store in a cool dry area, away from acids. Prolonged storage may cause product to cake from atmospheric moisture.

8. Exposure Controls / Personal Protection

Engineering Controls: Where possible, provide general mechanical and/or local exhaust ventilation to prevent release of airborne dust into the work environment. Eye wash facility should be provided in storage and general work area.

Personal Protective Equipment:

Eyes and Face: For dusty or misty conditions, or when handling solutions where there is reasonable probability of eye contact, wear chemical safety goggles and hard hat. Under these conditions do not wear contact lenses. Otherwise, appropriate eye and face protection equipment (ANSI Z87 approved) should be selected for the particular use intended for this material. Safety glasses with side shields are recommended.

Respiratory: Whenever dust in the worker's breathing zone cannot be controlled with ventilation or other engineering means, workers should wear respirators or dust masks approved by NIOSH/MSHA, EU CEN or comparable certification organization to protect them against airborne dust.

Hands, Arms, and Body: Wear long-sleeve shirt and trousers, and impervious gloves for routine product use. Cotton gloves are sufficient for dry product; wear impervious gloves when handling solutions.

Additional Exposure Guidelines: Federal guidelines treat the ingredient(s) in this product as a nuisance dust, as no product-specific guidelines have been issued for exposure. As with all nuisance dusts, worker breathing zone concentrations should be measured by validated sampling and analytical methods. The following limits (OSHA and MSHA) apply to this material:

Particulates Not Otherwise Regulated:
OSHA (PEL / TWA): 15 mg/m^3 (total dust); 5 mg/m^3 (resp fraction)
MSHA (PEL / TWA): 10 mg/m^3 (total dust)

Avoid simultaneous exposure to soda ash and lime dust. In the presence of moisture (i.e. perspiration) the two materials combine to form caustic soda (NaOH), which may cause burns.

The information noted above provides general guidance for handling this product. Specific work environments and material handling practices will dictate the selection and use of personal protective equipment (PPE).

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9. Physical and Chemical Properties

Material is a Solid at normal conditions. (molecular wt. = 105.99)

Odor:	Odorless
Appearance and Color:	White, granular solid
Auto ignition Temperature:	Not applicable
Boiling Point:	Decomposes
Coefficient of Oil / Water:	Not applicable
Density / Weight per Volume:	(g/l) Dense Grades: 0.9 -1.1; Natural Light: 0.7 -.9; Synthetic Light: 0.5 -.7
Evaporation Rate:	Not applicable (Butyl Acetate = 1)
Flash Point:	Not flammable
Melting Point:	854^{o}C (1569^{o}F)
Odor Threshold:	Not applicable
Oxidizing Properties:	Not applicable
Percent Volatile:	Not applicable
1% Solution pH:	11.3

Solubility in Water:	33.2% maximum 17% solution at 20°C
Specific Gravity:	2.533 (water = 1)
Vapor Density:	Not applicable
Vapor Pressure:	Not applicable

10. Stability and Reactivity

Conditions to avoid:	Contact with acids except under controlled conditions.
Stability:	Stable
Polymerization:	Will not occur.
Incompatible Materials:	Reacts with acids with release of large volumes of carbon dioxide gas and heat.
Hazardous Decomposition Products:	Heated to decomposition, it emits carbon dioxide.
Materials to avoid:	Aluminum, acids, fluorine, lithium, and 2,4,6-trinitrolouene. Simultaneous exposure of soda ash and lime dust will formcaustic soda (NaOH).

Other Precautions: When dissolving, add to water cautiously and with stirring; solutions can get hot.

11. Toxicological Information

Eye Effects:	Severe irritant (50 mg, rabbit).
Skin Effects:	Non-irritating to intact skin. Minor irritation may occur on abraded skin.
Dermal :	Mild irritant (500 mg/24 h, rabbit).
Oral LD_{50}:	4,090 mg/kg (rat).
Inhalation LC_{50}:	2.3 mg/l (2 h) (rat)
Sensitization:	0.25% sodium carbonate: non-sensitizing (human).
Target Organs:	Eyes.

Accute effects from Overexposure: May cause severe irritation of the eyes, including corneal opacities. Dusts and mists may be irritating to the skin, mucous membranes and upper respiratory tract. Although low in toxicity, ingestion may cause mausea, vomiting, stomachache, and diarrhea. No significant acute toxicological effects expected.

Chronic Toxicity: Excessive contact may produce “soda ulcers” on hands and perforation of the nasal septum. Sensitivity reactions may occur from prolonged and repeated exposure.

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be “probable” or “suspected” human carcinogens.

12. Ecological Information

Acute ecotoxicity:

96 – hour LC_{50}:	265 – 565 mg/l (daphnia magnia) (low toxicity)
	300 – 320 mg/l (blue gill sunfish) (low toxicity)
96 – hour TL_m:	1200 mg/l (mosquito-fish)
48 – hour TL_m:	840 mg/l (mosquito-fish)
48 – hour EC 50:	265 mg/l (daphnia magnia)
24 – hour LC_{50}:	800 mg/m3, 20 h exposure (guinea pig) (moderate toxicity)
5 Day EC 50:	242 mg/l (Nitszcheria linearis)
LD_{50}:	2800 mg/kg (rat) (moderately toxic)

Chronic ecotoxicity:

7 Day EC, biomass:	14 mg/l (phytoplankton)

Mobility:

Air:	Not Applicable
Water:	Considerable solubility and mobility.
Soil / sediments:	Non-significant adsorption

Abiotic degradation:

Water (hydrolysis):	degradation’s products: carbonate (pH>10) / carbonic acid / carbon dioxide (pH<6).
Soil	Hydrolysis as a function of pH.

Biotic degradation:

Aerobic / anaerobic:	Not applicable (inorganic compound)

Potenial for bioaccumaltion: Not applicable (ionizable inorganic compound)

Observed effects are related to alkaline properties of the product. Product is not significantly hazardous for the environment.

13. Disposal Considerations

Disposal Method: When this product is discarded or disposed of, as purchased, it is neither a characteristic nor a listed hazardous waste according to US Federal RCRA regulations (40 CFR 261). As a non-hazardous waste the material may be disposed of in a landfill in accordance with government regulations; check local or state regulations for applicable requirements prior to disposal. Any processing, usage, alteration, chemical additions to, or contamination of, the product may alter the

disposal requirements. Under Federal regulations, it is the generator's responsibility to determine if a waste is a hazardous waste.

14. Transportation Considerations

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not Regulated

Primary Hazard Class / Division: Not Applicable

UN / NA Number: None

Label(s), Placard(s), Marking(s): Not Applicable

Additional Information:

Hazardous Substance / RQ: Not Applicable
49 STCC Number: Not Applicable

International Maritime Dangerous Goods: Not Regulated

ADR – European Agreement Concerning the
International Carriage of Dangerous Goods by Road: Not Regulated
International Civil Aviation Organization (ICAO)/
International Air Transport Association (IATA): Not Regulated

15. Regulatory Information

United States

SARA Title III (Superfund Amendments and Reauthorization Act)

Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A):
Not Listed

Section 311 Hazard Categories (40 CFR 370):
Immediate (Acute) Health Hazard

Section 312 Threshold Planning Quantity (40 CFR 370):
The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.: None

Section 313 Reportable Ingredients (40 CFR 372):
Not listed.

CERCLA (Comprehensive Environmental Response Compensation and Liability Act)

CERCLA Designation and Reportable Quantities (RQ) (40 CFR 302.4):
Not Listed

TSCA (Toxic Substance Control Act)

TSCA Inventory Status (40 CFR 261): Listed

RCRA (Resource Conservation and Recovery Act)

RCRA Identification of Hazardous Waste (40 CFR 261): Waste Number – refer to Section 13 "Disposal Considerations" for RCRA status.

State Regulations: This product does not contain any components that are regulated under California Proposition 65.

Comments:

Clean Water Act (CWA) – Section 301/ 311: Not listed as a hazardous pollutant (40 CFR 116), nor as a toxic pollutant (40 CFR 401.15).
Clean Air Act (CAA) – Section 112: Not regulated under the chemical accident prevention provisions (40 CFR 68).

Canada

WHMIS (Workplace Hazardous Materials Information System)

Product Identification Number:	Not Applicable
Hazard Classification / Division:	Toxic, Class D, Div.2, Subdiv. B
Ingredient Disclosure List:	Listed

E Numbers: E500

EU EINECS Numbers: 011-005-00-2

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16. Other Information

HMIS

Health	2
Flammability	0
Physical Hazard	0
Personal Protection (PPE)	B

Protection = B (Safety glasses and gloves)

HMIS: Hazardous Material Identification System

Degree of Hazard Code:
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

NFPA

Health	2
Flammability	0
Reactivity	0
Special	None

No Special Requirements.

NFPA: National Fire Protection Association

Degree of Hazard Code:
4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

Other Information: Soda ash is produced in three principle grades: Dense, natural light and synthetic light soda ash. When these products are mixed in water they may be known as liquid soda ash. These grades differ only in physical characteristics such as bulk density and size and shape of particles, which influence flow characteristics and angle of repose. Other physical properties, as well as chemical as chemical properties of solutions, are common to each grade of soda ash.

EC Labelining

Name of dangerous product(s) (to indicate on label): Sodium Carbonate

According to Annex I of Dir. 67/548/EEC (19th ATP: Dir. 93/72/EEC):

Symbols	Xi	Irritant
Phrases R	36	Irritating to eyes.
Phrases S	2	Keep out of reach of children.
	22	Do not breathe dust.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Labeling “Dangerous for the environment”: Not dangerous Provisional classification of WG from EU-DGXI-1/3-04-98.
Indicate on the label (for packaging): EC Labeling

International Listings

Australia (AICS):	Listed
Korea:	KE-31380
Japan (ENCS):	(1)-164
Philippines (PICCS):	Listed
China:	Listed

Certified to ANSI / NSF 60

Concentration not to exceed 100 ppm when used for corrosion control or scale control pH adjustment.

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.

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