

# MATERIAL SAFETY DATA SHEET

GENIUM PUBLISHING CORPORATION  
1145 CATALYN STREET  
SCHENECTADY, NY 12303-1836 USA  
(518) 377-8855



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SODIUM CARBONATE,  
ANHYDROUS  
Revision A  
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## SECTION I. MATERIAL IDENTIFICATION

**MATERIAL NAME:** SODIUM CARBONATE, ANHYDROUS\*  
**OTHER DESIGNATIONS:** Soda Ash, Na<sub>2</sub>CO<sub>3</sub>, ASTM D458, GE Material D4D5, CAS #000 497 198  
**MANUFACTURER:** Material is available from several suppliers, including: Allied Chemical Corp., Industrial Chemicals Div., Ashland Chemical Co., BASF Wyandotte Corp., Industrial Chemicals Group, Stauffer Chemical Co.  
 \*Other forms are available: Monohydrate, Na<sub>2</sub>CO<sub>3</sub>·H<sub>2</sub>O; Decahydrate, Na<sub>2</sub>CO<sub>3</sub>·10H<sub>2</sub>O, which is also called Sal Soda or Washing Soda.

## SECTION II. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Sodium Carbonate, Anhydrous	ca 99	No TLV Established* Rat, Oral LD50 ~4000 mg/kg** LDLo 4000 mg/kg*** Rabbit, Skin 500 mg/24H Moderate Irritation Rabbit, Eye 100 mg/24H Severe Irritation
*Control at least as a nuisance particulate: Current OSHA PEL values are 15 mg/m <sup>3</sup> (total dust) or 5 mg/m <sup>3</sup> (respirable dust); ACGIH (1984) 10 mg/m <sup>3</sup> (total dust) or 5 mg/m <sup>3</sup> (respirable dust). **Stauffer Chemical Co. ***RTECS (1980)		

## SECTION III. PHYSICAL DATA

Melting point, deg C ----- 851	Specific gravity @ 68F ----- 2.53
Boiling point ----- Decomposes	Molecular weight ----- 106
Water solubility g/100 ml H <sub>2</sub> O:	pH @ 25 C, 1% aqueous soln. -- 11.3
At 0 C ----- 7.1	10% aqueous soln. -- 11.6
At 100 C ----- 45.5	

Appearance & Odor: White, hygroscopic powder or granular solid; odorless.  
 Note: The decahydrate begins to lose water at or below its melting point (34 C) and the monohydrate at about 50 C. Both will become anhydrous sodium carbonate when heated above 100 C.

## SECTION IV. FIRE AND EXPLOSION DATA

	Lower	Upper
Flash Point and Method		
Autoignition Temp.		
Flammability Limits in Air		
N/A	-	-

This is a noncombustible material. Use extinguishing media appropriate for the surrounding fire. Involvement in a fire causes decomposition yielding carbon dioxide. No unusual fire or explosion hazards; no special firefighting procedures. Firefighters must wear full protective gear and use self-contained breathing apparatus with a full facepiece when this material is involved in a fire.

## SECTION V. REACTIVITY DATA

This is a stable material in closed containers at room temperature. It is reported to begin to decompose as low as 400 C on heating to give carbon dioxide and NaO. It will react with fluorine gas at room temperature, generating incandescent temperatures. It can produce an explosion if it contacts red-hot aluminum metal. Hot conc. solutions are mildly corrosive to steel. It is an alkaline material that is incompatible with strong acids. (Releases CO<sub>2</sub> gas). In combination with calcium hydroxide it will yield caustic soda (NaOH). Reacts slowly with moisture and CO<sub>2</sub> to form sodium bicarbonate and various hydrates.

SECTION VI. HEALTH HAZARD INFORMATION	TLV (See Sect II)
<p>Exposure to airborne dust or mist (from solutions of this alkaline material) can cause irritation of eyes, skin, and upper respiratory tract. Excessive contact is known to have caused "soda ulcers" on hands and perforation of the nasal septum. Sensitivity reactions may occur from prolonged and repeated contact. Slightly toxic by ingestion, but large amounts can be corrosive to the GI tract producing abdominal pains, vomiting and diarrhea. Concentrated solutions in prolonged contact with skin or eyes can destroy tissue.</p> <p><b>FIRST AID:</b></p> <p><u>Eye Contact:</u> Promptly flush eyes with plenty of running water for 15 minutes or more including under eyelids. Consult a physician if irritation persists.</p> <p><u>Skin Contact:</u> Wash affected area of skin well with soap and water. Get medical help if irritation persists. Remove contaminated clothing.</p> <p><u>Inhalation:</u> Remove to fresh air. Restore and/or support breathing. Consult physician for observation and treatment.</p> <p><u>Ingestion:</u> If victim is conscious, give 2-3 glasses of milk or water to drink to dilute. Do not induce vomiting. Contact physician promptly. If vomiting occurs, give more fluids.</p>	
SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES	
<p>Notify safety personnel for large spills. Avoid producing dusty conditions. Scoop up solid for recovery or disposal. Flush residues and liquid spills to holding area for neutralization before discharge. Those involved in clean-up need protection against skin contact or inhalation of dust or mist. Flush residue with copious amounts of water.</p> <p><b>DISPOSAL:</b> After neutralization with, for example, dilute HCl, and further dilution, liquid wastes can usually be flushed to drain with <u>much</u> water.</p> <p>Follow Federal, State, and Local regulations.</p> <p>Solid scrap can be reserved for neutralization of acidic wastes.</p>	
SECTION VIII. SPECIAL PROTECTION INFORMATION	
<p>Use general and local exhaust ventilation to meet TLV for nuisance dust and to prevent irritating concentrations of dust or mist in the workplace. Ventilation requirements will depend on the process. An approved self-contained respirator with full facepiece is recommended for nonroutine or emergency conditions for inhalation protection. (OSHA allows use of other approved respirators as conditions warrant.)</p> <p>Use protective rubber gloves, boots, apron and other suitable clothing as needed to prevent skin contact. Wear safety glasses with side shields, safety goggles or a face shield. Provide an eyewash station near areas of use; a safety shower is needed where large amounts of material (especially as solutions) are handled.</p> <p>If clothing becomes contaminated with this material, remove and launder before reuse.</p>	
SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS	
<p>Store in tightly closed container in a clean, dry, well-ventilated area away from strong acids. Protect container from physical damage. Affinity for moisture and CO<sub>2</sub> can cause lumping and reduction of alkalinity in storage.</p> <p>Avoid contact with skin and inhalation of dust or mist. Do not ingest. Follow good hygienic practice. Wash thoroughly after handling.</p> <p>Do not eat, drink, or store food in areas of handling or use.</p> <p>It is a primary skin irritant.</p>	
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