

# Material Safety Data Sheet

## Section 1: Chemical Product and Company Identification

Product Name: Soda Ash, Sodium carbonate

CAS#: 497-19-8

RTECS: VZ4050000

TSCA: TSCA 8(b) inventory: Sodium carbonate

CI#: Not available.

Synonym: Crystal Carbonate, Disodium Carbonate, Sal Soda, Soda Ash, Washing Soda

Chemical Name: Sodium Carbonate, Anhydrous

Chemical Formula:  $\text{Na}_2\text{CO}_3$

## Section 2: Composition and Information on Ingredients

Composition:

Name CAS # % by Weight

Sodium carbonate 497-19-8 100

Toxicological Data on Ingredients: Sodium carbonate: ORAL (LD50): Acute: 4090 mg/kg [Rat]. 6600mg/kg [Mouse]. DUST (LC50): Acute: 2300 mg/m 2 hours [Rat]. 1200mg/m 2 hours [Mouse].

## Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Potential Chronic Health Effects:

Slightly hazardous in case of skin contact (sensitizer).

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to upper respiratory tract, skin, eyes.

Repeated or prolonged exposure to the substance can produce target organs damage.

## Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek

immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

## **Section 5: Fire and Explosion Data**

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Emits Na<sub>2</sub>O fumes when heated to decomposition.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:

Sodium carbonate can ignite and burn fiercely in contact with fluoride.

Sodium Carbonate in contact with fluorine decomposed at ordinary temperature with incandescence.

Special Remarks on Explosion Hazards:

Reacts explosively with red-hot aluminum metal.

Sodium carbonate + ammonia in arabic gum solution will explode.

## **Section 6: Accidental Release Measures**

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

## **Section 7: Handling and Storage**

Precautions:

Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and

show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids.

Storage:

Hygroscopic. Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24 °C (75.2 °F).

## **Section 8: Exposure Controls/Personal Protection**

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

## **Section 9: Physical and Chemical Properties**

Physical state and appearance: Solid. (Solid powder)

Odor: Odorless.

Taste: Alkaline.

Molecular Weight: 105.99 g/mole

Color: White.

pH (1% soln/water): 11.5 [Basic.]

Boiling Point: Not available.

Melting Point: 851 °C (1563.8 °F)

Critical Temperature: Not available.

Specific Gravity: Density: 2.532 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:

Soluble in hot water, glycerol.

Partially soluble in cold water.

Insoluble in acetone, alcohol.

## **Section 10: Stability and Reactivity Data**

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture

Incompatibility with various substances:

Reactive with acids.

Slightly reactive to reactive with moisture.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Hygroscopic. Combines with water with evolution of heat. Incompatible with phosphorus pentoxide, lithium, fluorine, fluoride, ammonia + silver nitrate, 2,4,6-trinitrotoluene, ammonia, acids, sodium sulfide + water, hydrogen peroxide, red hot aluminum metal, sodium sulfide, zinc, calcium hydroxide.

Sodium Carbonate is decomposed by acids with effervescence.

Reacts violently with F<sub>2</sub>, Lithium, and 2,4,6-trinitrotoluene.

Sodium begins to decompose at 400 C to evolve CO<sub>2</sub>.

Special Remarks on Corrosivity: Hot concentrated solutions of sodium carbonate are mildly corrosive to steel.

Polymerization: Will not occur.

## **Section 11: Toxicological Information**

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

WARNING: THE LC<sub>50</sub> VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE.

Acute oral toxicity (LD<sub>50</sub>): 4090 mg/kg [Rat].

Acute toxicity of the dust (LC<sub>50</sub>): 1200 mg/m<sup>3</sup> 2 hours [Mouse].

Chronic Effects on Humans: May cause damage to the following organs: upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).

Special Remarks on Toxicity to Animals: LDL (Lowest Published Lethal Dose) [Man] - Route: Oral; Dose: 714 mg/kg

Special Remarks on Chronic Effects on Humans: May cause adverse reproductive effects based on animal test data

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

Skin: Causes skin irritation with possible burns depending on the concentration, site (abraded or intact skin), and duration of exposure.

Eyes: Causes eye irritation and possible burns. Concentrated solutions may cause permanent corneal injury (permanent corneal opacity).

Ingestion: Sodium carbonate ingestion may cause irritation of the digestive tract resulting in nausea, vomiting, diarrhea, thirst, abdominal pain depending on concentration and amount ingested. May also affect the cardiovascular system .

Inhalation: Dust may cause respiratory tract and mucous membrane irritation with coughing and

shortness of breath (dyspnea), pulmonary edema.

Chronic Potential Health Effects: Chronic inhalation may result in decreased pulmonary function, nasal congestion, nosebleeds, perforation of the nasal septum. Other effects of chronic exposure are skin (dermatitis and ulceration), and gastrointestinal complaints. However, the effects of chronic exposure seem to be reversible if exposure is decreased.

## **Section 12: Ecological Information**

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

## **Section 13: Disposal Considerations**

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## **Section 14: Transport Information**

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

## **Section 15: Other Regulatory Information**

Federal and State Regulations: TSCA 8(b) inventory: Sodium carbonate

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):

R36/37/38- Irritating to eyes, respiratory system and skin.

S22- Do not breathe dust.

S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 1

Specific hazard:

Protective Equipment:

Gloves.

Lab coat.

Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

## **Section 16: Other Information**

References: Not available.

Other Special Considerations: Not available.