SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

Soda Ash (Sodium Carbonate)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Product name : Soda Ash (Sodium carbonate)

Synonyms : carbonic acid disodium salt; carbonic acid sodium salt; CASWELL NO. 752; chrystol carbonate; crystol carbonate (=sodium carbonate); disodium carbonate; natural ash; Na-X; snowlite 1; soda ash; soda, crystals; soda (=sodium carbonate); anhydrous soda; ash; bisodium carbonate; calcined soda(=sodium carbonate); sodium carbonate, anhydrous; sodium carbonate, anhydrous ASTM D458; sodium carbonate, anhydrous GE materials D4D5; sodium carbonate, anhydrous powder; sodium carbonate, crude; sodium carbonate, granular; Solvay soda; synthetic ash; washing soda (= sodiumcarbonate)

Registration number REACH : 01-2119485498-19-0011

Product type REACH : Substance/mono-constituent

CAS number : 497-19-8

EC index number : 011-005-00-2

EC number : 207-838-8

RTECS number : VZ4050000

Molecular mass : 105.99 g/mol

Formula : Na2CO3

1.2 Relevant identified uses of the substance or mixture and uses advised against:

1.2.1 Relevant identified uses

Chemical raw material

Glass production: raw material

Detergent: component

Acidity regulator

Paper production: auxiliary substance

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

Deep South Chemical, Inc.
229 Millstone Rd.
Broussard, LA 70518

Manufacturer of the product

Deep South Chemical, Inc.
229 Millstone Rd.
Broussard, LA 75018

1.4 Emergency telephone number:

24h/24h:

CHEMTREC : 1-800-424-9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Eye Irrit.	category 2	H319: Causes serious eye irritation.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

Xi; R36 - Irritating to eyes.

2.2 Label elements:

Labelling according to Regulation EC No 1272/2008 (CLP)

Signal word Warning

H-statements

H319 Causes serious eye irritation.

P-statements

P280 Wear eye protection/face protection.

P264 Wash hands thoroughly after handling.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/attention.

2.3 Other hazards:

SECTION 3: Composition/information on ingredients

3.1 Substances:

Name (REACH Registration No)	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
sodium carbonate (01-2119485498-19)	497-19-8 207-838-8	C>99 %	Xi; R36	Eye Irrit. 2; H319	(1)	Mono-constituent

(1) For R-phrases and H-statements in full: see heading 16

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

After eye contact:

Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed:

4.2.1 Acute symptoms

After inhalation:

AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Slight irritation. EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties.

After skin contact:

Not irritating.

After eye contact:

Irritation of the eye tissue. Lacrimation.

After ingestion:

AFTER ABSORPTION OF HIGH QUANTITIES: Nausea. Abdominal pain. Irritation of the gastric/intestinal mucosa.

4.2.2 Delayed symptoms

No effects known.

4.3 Indication of any immediate medical attention and special treatment needed:

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Adapt extinguishing media to the environment.

5.1.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known.

5.2 Special hazards arising from the substance or mixture:

Upon combustion: CO and CO2 are formed. Reacts on exposure to water (moisture) with (some) metals.

5.3 Advice for firefighters:

5.3.1 Instructions:

No specific fire-fighting instructions required.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Prevent dust cloud formation, e.g. by wetting. No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. Violent exothermic reaction with (some) acids: release of harmful gases/vapours (carbon dioxide). Carbon dioxide is heavier than air and will collect in ducts, drains and low lying areas.

6.3 Methods and material for containment and cleaning up:

Prevent dust cloud formation. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Keep out of direct sunlight. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, (strong) acids, metals, water/moisture.

7.2.3 Suitable packaging material:

No data available

7.2.4 Non suitable packaging material:

Aluminium, zinc.

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
No data available		

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL - Workers

sodium carbonate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	10 mg/m³	

DNEL - General population

sodium carbonate

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Acute local effects inhalation	10 mg/m³	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Dust production: dust mask with filter type P1.

b) Hand protection:

Gloves.

- materials for protective clothing (good resistance)

Butyl rubber, PVC.

c) Eye protection:

Safety glasses. In case of dust production: protective goggles.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Crystalline solid
	Crystalline powder
	Grains
	Lumps
Odour	Odourless
Odour threshold	Not applicable
Colour	Colourless to white
Particle size	694 µm
Explosion limits	Not applicable
Flammability	Non combustible
Log Kow	-6.19 ; Estimated value
Dynamic viscosity	Data not required
Kinematic viscosity	Data not required
Melting point	851 °C
Boiling point	Data not required
Flash point	Not required: exemption according to REACH
Evaporation rate	Not applicable
Vapour pressure	Not required: exemption according to REACH

No physical hazard class

9.2 Other information:

Absolute density 2530 kg/m³

Relative vapour density	Not applicable
Solubility	water ; 212.5 g/l ; 20 °C
Relative density	2.52-253 ; 20 °C
Decomposition temperature	1600 °C
Auto-ignition temperature	>400 °C
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	11.6 ; 5.0 %

Physical hazards

10.1 Reactivity:

Substance has basic reaction.

10.2 Chemical stability:

Hygroscopic.

10.3 Possibility of hazardous reactions:

Reacts on exposure to water (moisture) with (some) metals. Violent exothermic reaction with (some) metals. Reacts with (strong) oxidizers.

10.4 Conditions to avoid:

Avoid raising dust. Keep away from naked flames/heat.

10.5 Incompatible materials:

(strong) acids, metals, water/moisture, aluminium, zinc.

10.6 Hazardous decomposition products:

Violent exothermic reaction with (some) acids: release of harmful gases/vapours (carbon dioxide). Upon combustion: CO and CO2 are formed.

11.1 Information on toxicological effects:

11.1.1 Test results

- Toxicokinetics: summary

Toxicokinetics (absorption, metabolism, distribution and elimination)
The toxicokinetics of sodium carbonate are well understood. When sodium carbonate comes into contact with body fluids it will dissociate into carbonate and sodium. The carbonate could potentially increase the pH of the blood.

The major extracellular buffer in the blood and the interstitial fluid of vertebrates is the bicarbonate buffer system, described by the following equation:
H2O + CO2 _ H2CO3 _ H+ + HCO3
Carbon dioxide from the tissues diffuses rapidly into red blood cells, where it is hydrated with water to form carbonic acid. This reaction is accelerated by carbonic anhydrase, an enzyme present in high concentrations in red blood cells. The carbonic acid formed dissociates into bicarbonate and hydrogen ions. Most of the bicarbonate ions diffuse into the plasma. Since the ratio of H2CO3 to dissolved CO2 is constant at equilibrium, pH may be expressed in terms of bicarbonate ion concentration and partial pressure of CO2 by means of the Henderson-Hasselbach equation:
pH = pk + log [HCO3-]/aPCO2

The blood plasma of man normally has a pH of 7.40. Should the pH fall below 7.0 or rise above 7.8, irreversible damage may occur. Compensatory mechanisms for acid-base disturbances function to alter the ratio of HCO3 to PCO2, returning the pH of the blood to normal. Thus, metabolic acidosis may be compensated for by hyperventilation and increased renal absorption of HCO3. Metabolic alkalosis may be compensated for by hypoventilation and the excess of HCO3- in the urine (Johnson and Swanson, 1987). Renal mechanisms are usually sufficient to restore the acid-base balance (McEvoy, 1994). The uptake of sodium, via exposure to sodium carbonate, is much less than the uptake of sodium via food. Therefore, sodium carbonate is not expected to be systemically available in the body. Furthermore it should be realised that an oral uptake of sodium carbonate will result in a neutralisation in the stomach due to the gastric acid.

Acute toxicity

sodium carbonate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value determination
Oral	LD50		2800 mg/kg		Rat	Male/female	Experimental value
Dermal	LD50		>2000 mg/kg		Rabbit		Experimental value
Inhalation				2 h	Rat	Male	Experimental value
Conclusion							
	LC50		2.30 mg/l				

Low acute toxicity by the oral route
Low acute toxicity by the dermal route
Low acute toxicity by the inhalation route

Corrosion/irritation

sodium carbonate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination
Eye	Irritating	EPA 16 CFR 1500.42		1; 2; 3; 4; 7; 10; 14 days	Rabbit	Experimental value
Eye	Highly irritating	Equivalent to OECD 405		1; 24; 48; 72; 168 hours	Rabbit	Experimental value
Dermal	Not irritating	OECD 404		24; 48; 72 hours	Rabbit	Experimental value
Inhalation (aerosol)	Slightly irritating					Literature

Conclusion

Causes serious eye irritation.
Not classified as irritating to the skin
Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

sodium carbonate

Route of exposure	Result	Method	Exposure time	Observation time point determination	Species	Gender	Value	
Skin								Not determined, exemption according to REACH
Inhalation								Not determined, exemption according to REACH

Conclusion

Not classified as sensitizing for skin
Not classified as sensitizing for inhalation

Specific target organ toxicity

sodium carbonate

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Gender	Value	determination
Oral										No relevant data available
Dermal										No data available
Inhalation										No data available

Conclusion

Supplementary classification for repeated dose toxicity was not considered necessary

Mutagenicity (in vitro)

sodium carbonate

Result	Method	Test substrate	Effect	Value determination
Negative	Other	Escherichia coli		Experimental value
Ambiguous	OECD 471	Bacteria (S.typhimurium)		Read-across

Mutagenicity (in vivo)

sodium carbonate

Result	Method	Exposure time	Test substrate	Gender	Organ	Value determination
						No data available

Carcinogenicity

sodium carbonate

Route of exposure	Parameter	Method	Value	Exposure time	Species	Gender	Value			Effect
Inhalation								No data available	Organ	
Dermal								No data available		
Oral								No data available		

Reproductive toxicity

sodium carbonate

	Parameter	Method	Value	Exposure		Gender	Effect	Organ	Value determination
Developmental	NOAEL	Other	≥ 245 mg/kg		Rat				Experimental value
Effects on fertility			bw/day				No effect		Not determined, exemption according to REACH

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

sodium carbonate

No (test)data available

Chronic effects from short and long-term exposure

sodium carbonate

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Tingling/irritation of the skin. Affection of the nasal septum.

SECTION 12: Ecological information

12.1 Toxicity:

sodium carbonate

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt	
Acute toxicity fishes	LC50	Other	300 mg/l	96 h	Lepomis			Experimental value
Acute toxicity invertebrates	EC50	Other	200 - 227 mg/l	48 h	Ceriodaphnia sp.	Semi-static	Fresh water	Experimental value
Toxicity algae and other aquatic plants	EC50		242 mg/l	5 day(s)	Algae			Experimental value

Conclusion

Slightly harmful to fishes (LC50(96h) 100-1000 mg/l)

Practically non-toxic to algae (EC50 >100 mg/l)

Slightly harmful to invertebrates (EC50 (48h): 100 - 1000 mg/l)

pH shift

Not classified as dangerous for the environment according to the criteria of Directive 67/548/EEC

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2 Persistence and degradability:

Biodegradability: not applicable

12.3 Bioaccumulative potential:

sodium carbonate

Log Kow

Method	Remark	Value	Temperature	Value determination
		-6.19		Estimated value

Conclusion

Low potential for bioaccumulation (Log Kow < 4)

12.4 Mobility in soil:

Low potential for adsorption in soil

12.5 Results of PBT and vPvB assessment:

The criteria of PBT and vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006 do not apply to inorganic substances.

12.6 Other adverse effects:

sodium carbonate

Global warming potential (GWP)

Not included in the list of substances which may contribute to the greenhouse effect (Regulation (EC) No 842/2006)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
16 05 07* (discarded inorganic chemicals consisting of or containing dangerous substances). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Precipitate/make insoluble. Remove to an authorized dump (Class I). Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. May be discharged to wastewater treatment installation. Do not discharge into drains or the environment.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

Transport	Not subject

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	
Limited quantities	

Rail (RID)

14.1 UN number:

Transport	Not subject

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Hazard identification number	
Class	
Classification code	

14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	
Limited quantities	

Inland waterways (ADN)

14.1 UN number:

Transport	Not subject

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Class	
Classification code	

14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	
Limited quantities	

Sea (IMDG/IMSBC)

14.1 UN number:

Transport	Not subject

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Class	

14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Marine pollutant -	
Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	
Limited quantities	

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Annex II of MARPOL 73/78	

Air (ICAO-TI/IATA-DGR)

14.1 UN number:

Transport	Not subject

14.2 UN proper shipping name:

14.3 Transport hazard class(es):

Class	

14.4 Packing group:

Packing group	
Labels	

14.5 Environmental hazards:

Environmentally hazardous substance mark	no

14.6 Special precautions for user:

Special provisions	
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

European legislation:

European drinking water standards

Maximum concentration in drinking water: 200 mg/l (sodium) (Directive 98/83/EC)

Volatile organic compounds (VOC)

Not applicable (inorganic)

National legislation The Netherlands

Waste identification (the	
Waterbezwaarlijkheid	'11' KGA (the Netherlands): KGA category: 05

National legislation Germany

TA-Luft	TA-Luft Klasse 5.2.1
WGK	1; Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

National legislation France

No data available

National legislation Belgium

No data available

15.2 Chemical safety assessment:

A chemical safety assessment has been performed.

SECTION 16: Other information

Information based on classification according to CLP

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Enumerated in substance list Annex I of Directive 67/548/EEC et sequens

Labels

Irritant

R-phrases

36	Irritating to eyes

S-phrases

(02)	(Keep out of the 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

Full text of any R-phrases referred to under headings 2 and 3:

R36 Irritating to eyes

Full text of any H-statements referred to under headings 2 and 3:

H319 Causes serious eye irritation.

(*) = INTERNAL CLASSIFICATION BY DSC

PBT-substances = persistent, bioaccumulative and toxic substances

DSD	Dangerous Substance Directive
DPD	Dangerous Preparation Directive
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)

The informa on in this safety data sheet is based on data and samples provided to DSC. The sheet was wri en to the best of our ability and according to the state of knowledge at that me. The safety data sheet only cons tutes a guideline for the safe handling, use, consump on, storage, transport and disposal of the substances/prepara ons/mixtures men oned under point 1. New safety data sheets are wri en from me to me. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the informa on does not apply to substances/prepara ons/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specifica on for the substances/prepara ons/mixtures in ques on. Compliance with the instruc ons in this safety data sheet does not release the user from the obliga on to take all measures dictated by common sense, regula ons and recommenda ons or which are necessary and/or useful based on the real applicable circumstances. DSC does not guarantee the accuracy or exhaus veness of the informa on provided and cannot be held liable for any changes by third par es. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limi ng condi ons as stated in your DSC licence agreement or when this is failing the general condi ons of DSC. All intellectual property rights to this sheet are the property of DSC and its distribu on and reproduc on are limited. Consult the men oned agreement/condi ons for details.