PRODUCT DATA SHEET: SODIUM CARBONATE DENSE (SOCADE): Revision 5- Dated:17/02/2025

PRODUCT SPECIFICATION		
Product Name	Sodium Carbonate Dense	
Alternative Name		
Product Grade		
Specification Reference	SOCADE/4 (25/02/0024275)	
Item	**Guaranteed Values**	**Typical Values**
General requirements	Fine granules, white in color with an acceptable light cream shade	Fine granules, white in color with an acceptable light cream shade
Sodium carbonate (Na_2CO_3)	>99.6%	99.6 – 99.8%
Chlorides (NaCl)	≤0.25%	0.09 – 0.12%
Iron (Fe_2O_3)	≤0.002%	0.0002 – 0001%
Sulphates (Na_2SO_4)	≤0.02%	<0.02%
Loss of drying (H_2O)	≤0.5%	0.10 – 0.20%
Insoluble matter in H_2O	≤0.02%	0.007 – 0.009%
Density	0.95 – 1.2 kg/dm^3	0.97 – 1.10 kg/dm^3
Sieve Mesh Size	**Guaranteed Values**	**Range of Typical Values**
>2.0 mm	≤0.5%	0.0 – 0.2%
>1.6mm	≤1%	0.0 – 0.5%
<0.10 mm	≤5%	0.1 – 1.0%

NOTES

Exclusion of Liability

Information contained in this publication is accurate to the best of the knowledge and belief of Tennants.

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Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.

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SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Chemical Name (EINECS)	Sodium carbonate
Product Name	SODIUM CARBONATE
Alternative Name	Disodium carbonate, soda ash
Chemical Formula	Na_2CO_3
Trade Names	
Synonyms	
CAS Number	497-19-8
EC Number	207-838-8
Index Number	011-005-00-2
REACH Registration Number	01-2119485498-19-XXXX

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

Relevant identified uses: Formulation. Industrial applications: glass production. Other industrial applications include pH regulator (including technical food (sugar) industry), feed ingredient, detergent and cleaning agent, adsorbent, neutralising or precipitating agent, water treatment/softening, flue gas desulphurisation, paper production, smelting of iron and steel. Widespread use by professionals. Consumer applications.
A complete list of uses is given in the attached exposure scenarios.
Certain uses of this substance may be regulated or restricted by standards.
national or international. Buyer and prospective user will, on their sole and complete responsibility, comply with these standards, the orders of the relevant authorities and all existing patents and intellectual property rights; they will comply with the laws and regulations applicable to our products and/or their activities. The buyer and the potential user must independently determine the suitability of the product for the specific purpose and the way it is used.
Uses advised against: Not specified.

1.3 Details of the supplier of the safety data sheet

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Tel: 44(0)161 205 4454
Fax: 44(0) 161 203 4298
Email: msds@tennantsdistribution.com

1.4 Emergency telephone number

Tel: 44(0) 844 3350001 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation 1272/2008 (CLP)

Eye Irrit. 2 Causes serious eye irritation, hazard category 2. H319 Causes serious eye irritation.

2.2 Label elements

2.2.1 According to Regulation (EC) No. 1272/2008 (CLP).

Signal word : Warning

Hazard Statement

H319 - causes serious eye irritation

Precautionary statements.

P264 - Wash thoroughly after handling
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P305 + P351 + P338 - If in eyes, rinse cautiously with water for several minutes, remove contact lenses and continue rinsing.
P337 + P313- Get medical advice/attention.

2.3 Other hazards

The potential risk is at work: the possibility of sodium carbonate dust release, which may exceed the TWA indicator

for non-toxic dust (given in section 8.1).
The substance does not meet the PBT or vPvB criteria. The criteria of Annex XIII to the Regulation 1907/2008/EC (PBT or vPvB) does not apply to inorganic substances.
The substance has not been included in the list established in accordance with Article 59 (1) of the REACH Regulation as having endocrine disrupting properties. The substance does not meet the criteria for substances with endocrine disrupting properties as set out in Commission Regulation (EU) 2017/2100 (OJ L 301, 17.11.2017) and Commission Regulation (EU) 2018/605 (OJ L 101, 20.4.2018 as amended).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances Sodium Carbonate

CAS Number	EC Number	Index Number:	Classification	Wt. Percent Content
497-19-8	207-838-8	011-005-00-2	Eye Irrit. 2; H319	90.0 – 100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Move the affected person to fresh air and keep rested. Seek medical advice if necessary.
Skin contact: Immediately remove contaminated clothing. Flush contaminated skin with plenty of water and soap, then rinse with plenty of water. Seek medical advice if necessary.
Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Avoid strong stream of water due to the risk of mechanical damage to the cornea. It is recommended to use permanent or portable eye washers. Seek medical advice if necessary.
Ingestion: Do not induce vomiting. Rinse mouth with water, and then give to drink plenty of water. Seek medical advice if necessary.
Persons providing assistance should use appropriate personal protective equipment (given in section 8), ensure adequate general and local ventilation, avoid direct contact with the substance, avoid inhalation of dust.

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

Inhalation: May cause slight irritation of the respiratory tract, nasal and throat mucous membranes.
Eye contact: It's irritating to the eyes. It may cause redness, tearing, pain and impaired vision.
Skin contact: It may cause slight irritation, redness, dryness, pain, itching.
Ingestion: May cause irritation of the gastrointestinal mucosa. With the consumption of larger quantities, vomiting, stomach pain, diarrhea may occur.

4.3 Indication of any immediate medical attention and special treatment needed

Remove affected person from the contaminated product of the environment. In the event of health problems, consult your doctor or the centre of toxicological concern. Provide the information contained in the SDS. If unconscious do not give anything by mouth.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media

Suitable extinguishing media: Extinguishing media suitable to the burning media in the surrounding should be applied.
Unsuitable extinguishing media: Water jet.

5.2 Special hazards arising from the substance or mixture

Substance is not inflammable. During fire produce hazardous products (e.g. carbon oxide, carbon dioxide). Avoid inhalation of combustion products because they may pose a health risk.

5.3 Advice for fire-fighters

Wear full protective equipment and self-contained breathing apparatus with independent air circulation.
Containers exposed to fire or high temperature cool with water and if possible remove from the danger zone. Take up mechanically. Keep out of drains, surface waters and soil against pollution. Water from fire treated as hazardous pollution and accumulate in separate containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions,

For non emergency personnel: Should restrict access to non-emergency personnel to the area of failure until the completion of the disposal of the product. Wear appropriate personal protective equipment. Do not drink, eat and smoke. Provide adequate local and general ventilation. Avoid direct contact with the substance. Avoid inhalation of dust.
For emergency responders: Wear appropriate personal protective equipment. Do not drink, eat and smoke.
Provide adequate local and general ventilation. Avoid direct contact with the substance. Avoid inhalation of dust.

6.2 Environmental precautions

Secure the gullies. Prevent contamination of surface water and ground. In the event of any serious pollution of the

environment, notify the appropriate administrative authority, control and rescue services.)

6.3 Methods and material for containment and cleaning up

Secure the gullies. Keep damaged packaging. Damaged container and place in a substitute container. Collect the spilled substance mechanically avoiding the formation of dust, transfer to a tightly sealed containers and be disposed of or recycled. Contaminated area with plenty of water.

6.4 Reference to other sections

Disposal - see Section 13. Personal protective equipment - see Section 8.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Do not allow to exceed the normative concentrations of hazardous constituents in the workplace. Provide adequate local exhaust and general ventilation. The workplace should be equipped with a safety shower and eyewash station. It is recommended to use fixed (EN 15154-2:2006) or portable (EN 15154-4:2009) eye washers. Prevent against penetration into drains, surface and ground water and soil. Prevent the use of mutually incompatible materials (given in section 10.5).

The product reacts exothermically with water. When dissolving, carefully add water, stirring.

Mandatory general regulations on occupational health. Do not eat, drink, take drugs at work or smoke. Avoid skin and eye contact. Avoid inhalation of dust. Remove contaminated clothing and protective equipment before entering dining areas. Wash your hands before break and after working with the product. After use, wash the body surface and personal protective equipment. Contaminated clothing should be changed and cleaned before reuse. Use protection measures given in section 8.2.2.

7. 2 Advice on general occupational hygiene

Store in properly marked, factory, tightly closed packages, with a label in accordance with applicable regulations. Store in a cool, dry, well-ventilated storage room. Avoid very high temperatures. Protect from moisture (the substance may become clotted). Avoid contact with sulphuric acid (carbon dioxide is emitted), phosphorus pentoxide, fluorine, lithium, 2,4,6-trinitrotoluene, trichloroethylene and aluminium. Corrosive to metals in the aquatic environment.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage: store in a cool dry place

Store in original, closed and correctly labelled container. Store away from incompatible materials

7.3 Specific end use(s)

No additional information

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Substance name	TWA	STEL	BLV
Dusts	10 mg/m^3 (inhalable dust) 4 mg/m^3 (respirable dust)	-	-

Legal basis: Ordinance on maximum permissible concentration and intensity of harmful factors in the work environment in accordance with national limit values.

EH40/2005 Workplace exposure limits, fourth edition, published 2020, ISBN 978 0 7176 6733 8.

Monitoring procedures:

Use methods described in European Standards.

DNEL:

	DNEL Workers				DNEL Consumers			
Route of exposure	Acute, local effect	Acute systemic effect	Chronic, local effects	Chronic, systemic effects	Acute, local effect	Acute systemic effect	Chronic, local effects	Chronic, systemic effects
Inhalation	No threat identified	No threat identified	10 mg/m^3	No threat identified	No threat identified	5 mg/m^3	No threat identified	No threat identified
Skin	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified
Oral	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified	No threat identified

PNEC:

The purpose of environmental protection	PNEC
Fresh water	No threat identified
Freshwater sediments	No threat identified
Marine water	No threat identified

Marine sediments	No threat identified
Food chain	No threat identified
Microorganisms treatment – in wastewater	No threat identified
Soil (agricultural)	No threat identified
Air	No threat identified

8.2 Exposure controls

Appropriate engineering controls

Appropriate precautions for use and storage of the product are given in section 7.

Individual protection measures, such as personal protective equipment

Eye / face protection: Wear suitable protective glasses of goggles type, e.g. made of polycarbonate (EN 166).

Skin Protection: In industrial usage wear protective clothing made of natural materials (cotton) or synthetic fibres and gloves (glove materials: Natural, Nitrile, Butyl, Neoprene rubber) or PVC (glove thickness: 0.5 mm, break through time: >480 min.) (EN 374).

Respiratory protection: In the case of high concentrations of dust, use respiratory equipment with particle filter color-coded white and the symbol P. It is recommended to use filtering half masks to protect against particles (EN 149).

Thermal Hazards: Protection is not required.

The personal protective equipment used should meet the requirements of Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC (OJ L 81, 31.3.2016). The employer must provide personal protective equipment appropriate to the type of work and meeting all requirements, including maintenance and cleaning.

Concentrations should be monitored hazardous substances in the workplace in accordance with recognised test methods. Mode, method, type and frequency of testing and measurement of harmful factors in the working environment should meet the requirements of local/regional/national laws.

Environmental exposure controls

Do not introduce the product to ground water, sewage, wastewater or soil.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid – white powder or fine crystals (light soda), fine granules (heavy soda)
Colour	Light soda - white Heavy soda - white with an acceptable brown shade Heavy monoh soda. - white with an acceptable light cream shade Coarse soda – white
Odour	Acceptable slight smell of ammonia
Melting point/freezing point	851°C (101,3 kPa)
Boiling point or initial boiling point and boiling range	According to Annex VII (section 7.3) of the REACH Regulation, tests do not need to be carried out because the substance is a solid that melts above 300°C.
Flammability	The substance is non-flammable (test results in accordance with GLP guidelines).
Lower and upper explosion limit	According to Annex VII (point 7.11) of the REACH Regulation, tests do not need to be carried out. The substance does not present an explosive hazard as there are no chemical groups in the structure associated with explosive properties.
Flash point	According to Annex VII (point 7.9) of the REACH Regulation, tests do not need to be carried out because sodium carbonate is an inorganic substance.
Auto-ignition temperature	According to Annex XI (point 2) of the REACH Regulation, tests do not need to be carried out because the properties of the substance and its chemical structure are known. Sodium carbonate can be said to be a stable inorganic molecule.
Decomposition temperature	Above 400°C CO_2 begins to be released.
pH	11.5 (5% aqueous solution; 20°C)
Kinematic viscosity	According to Annex XI (point 2) of the REACH Regulation, the test does not have to be performed due

	to the properties of the substance. Sodium carbonate is a solid. Viscosity is a property of liquid substances.
Solubility	In water: 212.5 g/l at 20ºC Practically does not dissolve in most organic solvents.
Partition coefficient n- octanol/water (log value)	According to Annex VII (point 7.8) of the REACH Regulation, tests do not need to be carried out because sodium carbonate is an inorganic substance.
Vapour pressure	According to Annex VII (point 7.5) of the REACH Regulation, tests do not need to be carried out because the melting point of sodium carbonate is higher than 300ºC. Sodium carbonate is an inorganic salt and therefore the vapour pressure value can be considered negligible.
Density and/or relative density	Relative density: 2.52-2.53 g/cm^3 (at 20°C)
Relative vapour density	Not applicable (sodium carbonate is an inorganic salt)
Particle characteristics	Particle size distribution studies were performed on 3 samples of sodium carbonate. Sample 1: MMAD = 198 µm, D10 = 44 µm (SD = 0.21), D50 = 133 µm (SD = 0.44), D90 = 257 (SD = 1.4) Sample 2: MMAD = 694 µm, D10 = 240 µm (SD = 4.4), D50 = 466 µm (SD = 2.3), D90 = 821 (SD = 11) Sample 3: MMAD = 1580 µm, D10 = 8 µm (SD = 0.63), D50 = 1063 µm (SD = 14), D90 = 1598 µm (SD = 9.3)

9.2 Other information

In water solutions heavily corrosive for the majority of metals.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Under conditions of storage and handling as intended – no reactivity. Hygroscopic substance. Reacts exothermically with water. It reacts with acids to produce carbon dioxide.

10.2 Chemical stability

Under normal conditions of use and storage, the substance is stable. Hygroscopic substance. At temperatures above 400ºC CO_2 begins to be released.

10.3 Possibility of hazardous reactions

The product reacts exothermically with water.

10.4 Conditions to avoid

Very high temperatures, moisture (the substance may clot). Non-compliant materials are listed in section 10.5.

10.5 Incompatible materials

Strong acids, phosphorus pentoxide, fluorine, lithium, 2,4,6-trinitrotoluene, trichloroethylene and aluminium. Corrosive to metals in the aquatic environment.

10.6 Hazardous decomposition products

After heating, carbon dioxide is emitted above the decomposition temperature.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: Based on the available data, the classification criteria are not met.
Oral: LD50 (rat, Wistar) 2800 mg/kg b.w. (Na2CO3·1H2O) (20% Sodium Carbonate Solution, dose 1300, 1800, 2600, 3600 i 5000 mg/kg, b.w./d) (Rinehart, WE 1978)
Dermal: LD50 (rabbit, New Zealand White) >2000 mg/kg b.w. (Na2CO3·1H2O) (dose 2000 mg/kg b.w., exposure time - 24 hours) (method according to EPA 16 CFR 1500.40) (Rinehart, WE 1978)
Inhalation: According to point 8. 5 of Annex VIII to REACH, the study does not need to be performed as reliable information is available on acute toxicity via two other routes of exposure - the oral and dermal routes. The above studies have been performed on sodium carbonate monohydrate, but due to the relatively low water content of sodium carbonate monohydrate, the toxicity of sodium carbonate is not expected to be significantly different. The low toxicity of sodium carbonate is confirmed by human experience. Although sodium carbonate is widely and has long been used, no cases of acute oral poisoning have been found in the published literature. The low oral toxicity of sodium carbonate can be explained by the neutralization of sodium carbonate in the stomach.

Skin Corrosion/Irritation

Based on the available data, the classification criteria are not met. Skin irritation studies were conducted in rabbits for solid sodium carbonate according to OECD 405 (Chibanguza, 1985); in rabbits for 50% sodium carbonate

according to EPA 16 CFR 1500. 3 (Rinehart, 1978); in rabbits, guinea pigs and humans for 50% sodium carbonate according to the modified FHSA procedure proposed by the FDA (Nixon et al., 1975); in humans, a flake test was performed for 98% sodium carbonate (see Figure 1). et al., 1996). No erythema and oedema were observed when applied to intact skin, therefore sodium carbonate has no or low skin irritation potential. The results of irritation studies show that the substance cannot be corrosive to the skin.

Serious eye damage/irritation

Causes serious eye irritation (H319).

From the available data, different results of eye irritation have been obtained. Studies in rabbits (New Zealand White) using 0. 1 ml of sodium carbonate monohydrate and sodium carbonate (anhydrous) resulted in classification as irritant and severe irritant respectively (Reinhart, EC, 1978). The test scoring system complied with EPA 16 CFR 1500. 42, which was not comparable to CLP criteria.

Studies in rabbits (New Zealand White) using 0. 1 ml sodium carbonate (Murphy JC et al., 1982) using Draize methodology (comparable to OECD 405) showed that sodium carbonate is an eye irritant. On the basis of the available test results and in accordance with the harmonised classification, the registrant classified sodium carbonate as an eye irritant. The results of irritation studies show that the substance is unlikely to cause serious damage to the eyes.

Respiratory or skin sensitisation

Based on the available data, the classification criteria are not met. No data are available on the sensitising effect of sodium carbonate. According to Annex XI, p. 1 of the REACH Regulation, studies do not appear to be scientifically necessary. The sensitising properties of sodium carbonate, based on the physiological role of ions present in the solution, as well as the fact that no sensitising effects have been reported despite long and extensive use (e. g. glass, soaps, detergents and other chemicals, metal, mining and pulp and paper industries) and consumer use (cosmetics, soaps, scrubbing powders, soaking and washing powders, food additive).

Germ cell mutagenicity

Based on available data, the classification criteria are not met. Available in vitro tests were negative (mutagenicity test (Escherichia coli Chromotest) (Olivier Ph, Marzin D. 1987), chromosome aberration test for sodium carbonate (Yamada M. Honma M. 2018) and Ames test (Ishidate et al, 1984). for sodium bicarbonate)). When the pH is kept below 8, in order to have a well- functioning bioassay system, mainly bicarbonate will be available. In addition, sodium bicarbonate is naturally present in cells and both the structure of sodium bicarbonate and sodium carbonate do not indicate genotoxic potential. In addition, sodium bicarbonate is used in cosmetic products, pharmaceuticals and as a food additive in the European Union and is therefore not considered reproductive toxicant.

Carcinogenicity:

Based on the available data, the classification criteria are not met. No data are available on the carcinogenic effect of sodium carbonate. Although the substance is widely used (in cosmetics, pharmaceuticals and as a food additive), there is no evidence that sodium carbonate can induce hyperplasia or neoplastic lesions.

Reproductive toxicity:

Based on the available data, the classification criteria are not met.

Taking into account the physiological role of ions, it is considered that the substance should not reach the foetus or male and female reproductive organs following oral, dermal or respiratory exposure.

Effects on fertility: No data on fertility toxicity are available. According to Annex XI p. 1 of REACH Regulation, studies are not necessary for scientific reasons, as exposure to sodium carbonate will not increase systemic levels of sodium and carbonates due to the homeostatic regulation of both ions.

Developmental toxicity: Developmental studies were conducted in 3 species (mice, rabbits, rats) after oral administration of sodium carbonate, showed no developmental effects and NOAELs were above the highest administered dose (FDA, 1974).

STOT-single exposure:

Based on the available data, the classification criteria are not met.

STOT-repeated exposure:

Based on the available data, the classification criteria are not met.

A repeated dose inhalation toxicity study, which has not been described in sufficient detail, revealed local effects on the lung that could be expected based on the alkaline reaction of the substance. Reliable repeated dose toxicity studies following inhalation, oral and dermal exposure are not available. The risk of the long- term effects of sodium ions to humans is well known and is taken into account in the prevention and control of blood pressure. It is recommended to consume 2-3 g of sodium (diet) or 3. 1-6 g (for healthy people) (Fodor et al. 1999). Also, sodium carbonate should not be present in the body due to neutralization by gastric acid or in the blood system. Therefore, additional repeated dose toxicity studies are considered unnecessary. In addition, sodium carbonate is used as a food additive, which confirms that the substance does not show repeated dose toxicity. Joint FAO/WHO Expert Committee Food Additives considered that it is not necessary to establish an Acceptable Daily Intake (ADI) for sodium carbonate (JECFA, 1965).

Aspiration hazard
Based on available data, the classification criteria are not met.

Endocrine disrupting properties
The substance has not been included in the list established in accordance with Article 59 (1) of the REACH Regulation as having endocrine disrupting properties. The substance does not meet the criteria for substances with endocrine disrupting properties as set out in Commission Regulation (EU) 2017/2100 (OJ L 301, 17.11.2017) and Commission Regulation (EU) 2018/605 (OJ L 101, 20.4.2018 as amended).

12. ECOLOGICAL INFORMATION

12.1 Toxicity
The lowest L(E)C50 is >100 mg/l (48h EC50 study is 200 mg/l for invertebrates (Ceriodaphnia dubia)).
Therefore, sodium carbonate need not be classified in accordance with Regulation (EC) No 1272/2008.

Acute/short term toxicity to fish
LC50 (Lepomis macrochirus) 300 mg/l/96h (method in accordance with the guidelines of the Federation of Associations for Wastewater and Industrial Waste) (Cairns J., Jr i Scheier A.,1959)

Chronic/long term to toxicity to fish
According to Annex XI, p. 1 of the REACH Regulation, the tests do not need to be carried out, as sodium carbonate is in a dissociated form in the aquatic environment. Both sodium and carbonate ions occur naturally and their concentrations in surface waters depend on many factors: geological parameters, atmospheric conditions and human activity. If sodium carbonate is added to the aquatic ecosystem, it is converted into sodium bicarbonate, as the pH of the water increases. Sodium bicarbonate has very low chronic toxicity.

Acute/short term toxicity to aquatic invertebrates
LC50 (Ceriodaphnia dubia) 200-227 mg/l/48h (EPA compliant method - Warne & Julli, 1999) (Warne MS I Schifko AD, 1999)

Chronic/long term toxicity to aquatic invertebrates
According to Annex XI, p. 1 of the REACH Regulation, tests do not need to be carried out because sodium carbonate is dissociated in the aquatic environment. Both sodium and carbonate ions occur naturally and their concentrations in surface waters depend on many factors: geological parameters, atmospheric conditions and human activity. If sodium carbonate is added to the aquatic ecosystem, it is converted into sodium bicarbonate, as the pH of the water increases. Sodium bicarbonate has very low chronic toxicity.

Acute toxicity to algae and aquatic plants
According to Annex XI, p. 1 of the REACH Regulation, tests do not need to be carried out because sodium carbonate is dissociated in the aquatic environment. Both sodium and carbonate ions occur naturally and their concentrations in surface waters depend on many factors: geological parameters, atmospheric conditions and human activity.
Toxicity to birds
According to column 2 of Annex X to REACH, studies on birds are not required because the risk assessment based on mammalian toxicity data indicates that sodium carbonate is neutralised to sodium bicarbonate after oral intake.

12.2 Persistence and degradability
Sodium carbonate is an inorganic substance that cannot be oxidized or biodegraded by microorganisms.
Sodium carbonate dissociates in water. Ions in aqueous solution coexist in chemical equilibrium:
$HCO_3^- \leftrightarrow CO_3^{2-} + H^+$ pKa = 10.33
$CO_2 + H_2O \leftrightarrow HCO_3 + H$ pKa = 6.35
Only a small portion of the dissolved CO_2 is present as HCO_3^-, the major portion is present as CO_2.
The amount of CO_2 in water is in equilibrium with the partial pressure of CO_2 in the atmosphere.
The balance between CO_2 / HCO_3^- / CO_3^{2-} buffers the pH of drinking water.
Degradation Hydrolysis: According to Annex XI, p.1 of REACH Regulation, tests do not need to be performed because sodium carbonate dissociates in water.
Biodegradation: According to Annex XI, p.2 of REACH, biodegradation tests in water, simulation tests of total degradation in surface water, simulation tests in sediments and soils do not need to be carried out if the substance is inorganic.

12.3 Bio accumulative potential
When dissolved in water, sodium carbonate dissociates into sodium and carbonate ions, which are ubiquitous in living organisms. Therefore, the bioaccumulation study has no added value and is considered to be scientifically unjustified.
Octanol/water partition coefficient (Kow): Not applicable (sodium carbonate is an inorganic salt).
Bioconcentration factor (BCF): Not applicable (sodium carbonate is an inorganic salt).

12.4 Mobility in soil
If sodium carbonate is introduced into the soil, it may escape into the atmosphere as CO_2 (as mentioned above), precipitate as metal carbonate, form complexes or remain in solution. High water solubility and low vapour pressure indicate that sodium carbonate is predominantly found in the aqueous medium. In water, sodium carbonate dissociates into sodium and carbonate ions, which will not adsorb on solids or surfaces and will not accumulate in living tissues. Both sodium and carbonate ion have a broad natural occurrence.

12.5 Results of PBT and vPvB assessment
The PBT or vPvB criteria of Annex XIII to the Regulation 1907/2008/EC does not apply to inorganic substances.

12.6 Other adverse effects
The substance has not been included in the list established in accordance with Article 59 (1) of the REACH Regulation as having endocrine disrupting properties. The substance does not meet the criteria for substances with endocrine disrupting properties as set out in Commission Regulation (EU) 2017/2100 (OJ L 301, 17.11.2017) and Commission Regulation (EU) 2018/605 (OJ L 101, 20.4.2018 as amended).

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
During removal of waste comply with the regional / national laws.
Community legislation
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008 as amended). - European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste (OJ L 365, 31.12.1994 as amended).
Disposal methods for the product: Don't introduce into the environment. Collect spilt substance to the containers. Reused or pass in a properly labelled containers for disposal to the qualifying company.
Disposal methods for used packing: Don't introduce into the environment. Packaging disposed of as waste material, pass in a properly labelled containers for disposal to the qualifying company.

14. TRANSPORT INFORMATION

This product is not classified as hazardous for transportation

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006 as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008 as amended).
Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (OJ L 203, 26.6.2020).

15.2 Chemical safety assessment
A chemical safety assessment has been completed.

16. OTHER INFORMATION

Full text of H phrases
H319 - Causes serious eye irritation.

Source of key data used to compile the data sheet
Supplier information

Modifications from last revision
The Specification and Safety Data Sheet have been revised throughout in accordance with current data.
Date: 17/02/2025