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

### 1.1. Product identifier

**Sodium carbonate (CAS No.: 497-19-8, EC No.: 207-838-8)**

**Synonyms:** Calcined soda, light/dense soda ash, anhydrous sodium carbonate, light/dense/dense disodium carbonate coarse, sodium carbonate - feed material/light/dense/dense from the monohydrate method/anhydrous dense - coarse, dense soda ash – coarse, light/dense anhydrous soda, Soda Ash (light, dense)

**The registration number: 01-2119485498-19-0013**

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

**Relevant identified uses:** Formulation. Industrial use: glass production. Other industrial use, including: as pH regulator (in the food industry (confectionery)) of technical quality, feed ingredient, detergent and cleaning agent ingredient, adsorbent, metal neutralizing or precipitating agent, use in water treatment/softening, flue gas desulfurization, paper production, iron and steel smelting. Widespread use by professional workers. Consumer use.

A complete list of uses is listed in the attached exposure scenarios.

Certain uses of this substance may be regulated or restricted by national or international standards. The buyer and the eventual user, under their sole and absolute responsibility, will comply with these standards, the orders of the relevant authorities and all existing patents and intellectual property rights; will comply with the laws and regulations applicable to our products and/or their operations. The buyer and the possible user must independently determine the suitability of a given product for a specific purpose and method of its use.

**Uses advised against:** Not determined.

### 1.3. Details of the supplier of the safety data sheet

**Manufacturer:** CIECH Soda Polska S.A.

**Address:** Poland; PL 88-101 Inowrocław; 4 Fabryczna street


**Telephone:** +48 52 354 15 00

**Distributor:** CIECH S.A.

**Address:** Poland; PL 00-684 Warszawa; 62 Wspólna Street,

**Telephone:** +48 572 660 404

**E-mail address** of the person responsible for the SDS: [sds@ciechgroup.com](mailto:sds@ciechgroup.com)

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#### 1.4. Emergency telephone number

112 (emergency call), 999 (emergency telephone number)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation 1272/2008/EC:

**Eye Irrit. 2** Eye irritation, Hazard Category 2.

**H319** Causes serious eye irritation.

### 2.2. Label elements

#### Label accordance with Regulation 1272/2008/EC (CLP)

**Hazard pictograms, signal words:**



**Warning**

#### Hazard statements:

H319 - Causes serious eye irritation.

#### Precautionary statements:

P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves, protective clothing, eye protection.

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 or 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).

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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

<b>Substance name:</b>	<b>Sodium carbonate</b>
<b>Concentration [%]:</b>	90-100
<b>CAS Number:</b>	497-19-8
<b>EC Number:</b>	207-838-8
<b>Index Number:</b>	011-005-00-2
<b>Classification 1272/2008/EC:</b>	Eye Irrit. 2; H319

In section 16 stated the importance of H-phrases, abbreviations and acronyms.

## SECTION 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 8.2.2.), 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 irritating of respiratory tracts, mucous membranes of nose and throat.

**Eye contact:** Irritating to eyes. May cause redness, lacrimation, pain and weakness of vision.

**Skin contact:** May cause slight irritation, redness, dryness, pain, itching.

**Ingestion:** May cause irritation of the gastrointestinal mucosa. By bigger amounts intake vomiting, stomach ache, diarrhea may occur.

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#### 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.

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## SECTION 5: Firefighting measures

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### 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

Non-flammable substance. During combustion 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 firefighters

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.

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## SECTION 6: Accidental release measures

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### 6.1. Personal precautions, protective equipment and emergency procedures

**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

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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 8.2.2.

## SECTION 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).

Reaction with water is exothermic. During dissolution, add water carefully while 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. Conditions for safe storage, including any incompatibilities

Keep in properly labeled, factory tightly sealed, with a label which complies with current regulations. Store in dry, cool and well ventilated storage room. Avoid to high temperature. Protect against moisture (substance may be lumpy). Keep away from sulphuric acid (carbon dioxide is released), phosphorous pentoxide, fluorine, lithium, 2,4,6-trinitrotoluene, trichloroethylene and aluminium. It has a corrosive effect on metals in the aqueous environment.

### 7.3. Specific end use(s)

Provided in exposure scenarios.

Follow the instructions given in this safety date sheet and exposure scenarios.

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Substance name	TWA	STEL	BLV
Dusts	10 mg/m <sup>3</sup> (inhalable dust) 4 mg/m <sup>3</sup> (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:

Route of exposure	DNEL Workers				DNEL Consumers			
	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 <sup>3</sup>	No threat identified	No threat identified	No threat identified	5 mg/m <sup>3</sup>	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 in wastewater treatment	No threat identified

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<b>Soil (agricultural)</b>	No threat identified
<b>Air</b>	No threat identified

## 8.2. Exposure controls

### 8.2.1 Appropriate engineering controls

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

### 8.2.2 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 fibers 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 exposure scenarios provide information on the required protection measures appropriate for the process being carried out.

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 recognized 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.

### 8.2.3 Environmental exposure controls

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

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## SECTION 9: Physical and chemical properties

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### 9.1. Information on basic physical and chemical properties

**Physical state:** Solid – power or fine crystalline powder (light soda), fine granules (dense soda)

**Colour:** Light soda – white  
Dense soda - white with an acceptable brown tint



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<b>Odour:</b>	Dense monochromatic soda - white with an acceptable slightly cream tint
<b>Melting point/freezing point:</b>	Coarse soda - white
<b>Boiling point or initial boiling point and boiling range:</b>	Acceptable slight odour of ammonia
<b>Flammability:</b>	851 °C (101.3 kPa)
<b>Lower and upper explosion limit:</b>	According to Annex VII (point 7.3) of REACH, the study does not need to be conducted as the substance is a solid that melts above 300 °C
<b>Flash point:</b>	The substance is non-flammable (results of a GLP-compliant guideline study)
<b>Auto-ignition temperature:</b>	According to REACH Regulation Annex VII (point 7.11) the test does not need to be conducted. The substance does not pose an explosion hazard because there are no chemical groups in the structure associated with explosive properties
<b>Decomposition temperature:</b>	According to Annex VII (point 7.9) of REACH, the study does not need to be conducted as sodium carbonate is an inorganic substance
<b>pH:</b>	According to Annex XI (point 2) of REACH, the study does not need to be conducted as the properties of the substance and its chemical structure are known. It can be concluded that sodium carbonate is a stable inorganic molecule.
<b>Kinematic viscosity:</b>	Above 400 °C to releases of CO <sub>2</sub>
<b>Solubility:</b>	11.5 (5 % water solution) at 20 °C
<b>Partition coefficient n-octanol/water (log value):</b>	According to Annex XI (point 2) of the REACH Regulation, the study 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
<b>Vapour pressure:</b>	In water: 212.5 g/l at 20 °C.
<b>Density and/or relative density:</b>	It is practically insoluble in most organic solvents
<b>Relative vapour density:</b>	According to Annex VII (point 7.8) of REACH, the study does not need to be conducted as sodium carbonate is an inorganic substance
<b>Particle characteristics:</b>	According to Annex VII (point 7.5) of the REACH Regulation, the study does not need to be performed as the melting point of sodium carbonate is higher than 300 °C. Sodium carbonate is an inorganic salt, so the value of the vapor pressure can be considered negligible.
	Relative density: 2.52-2.53 at 20 °C
	Not applicable (sodium carbonate is an inorganic salt)
	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 =





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4.4), D50 = 466  $\mu\text{m}$  (SD = 2.3), D90 = 821 (SD = 11)  
Sample 3: MMAD = 1580  $\mu\text{m}$ , D10 = 8  $\mu\text{m}$  (SD = 0.63), D50 = 1063  $\mu\text{m}$  (SD = 14), D90 = 1598  $\mu\text{m}$  (SD = 9.3)

## 9.2. Other information

### 9.2.1. Information with regard to physical hazard classes

Not applicable.

### 9.2.2. Other safety characteristics

In water solutions heavily corrosive for the majority of metals.

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## SECTION 10: Stability and reactivity

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### 10.1. Reactivity

Under the conditions of storage and handling as intended - no reactivity. A hygroscopic substance. Reaction with water is exothermic. Reacts with acids with the separation carbon dioxide.

### 10.2. Chemical stability

Under normal conditions of use and storage of the substance is stable. A hygroscopic substance. Above 400 °C to releases of CO<sub>2</sub>.

### 10.3. Possibility of hazardous reactions

Reaction with water is exothermic.

### 10.4. Conditions to avoid


Very high temperature, moisture (substance may be lumpy).  
Incompatible materials are listed in section 10.5.

### 10.5. Incompatible materials

Strong acids, phosphorous pentoxide, fluorine, lithium, 2,4,6-trinitrotoluene, trichloroethylene and aluminium. It has a corrosive effect on metals in the aqueous environment.

### 10.6. Hazardous decomposition products

After heating above decomposition temperature carbon dioxide is generated.

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## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity:

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

#### Oral:

LD<sub>50</sub> (rat, *Wistar*) 2800 mg/kg b.w. (Na<sub>2</sub>CO<sub>3</sub>·1H<sub>2</sub>O) (20 % sodium carbonate solution, dose 1300, 1800, 2600, 3600 and 5000 mg/kg, b.w./d) (Rinehart, WE 1978)

#### Dermal:

LD<sub>50</sub> (rabbit, *New Zealand White*) >2000 mg/kg b.w. (Na<sub>2</sub>CO<sub>3</sub>·1H<sub>2</sub>O) (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 of REACH, the study does not need to be conducted as reliable information is available on acute toxicity via two other routes of exposure - oral and dermal.

The above studies were 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 has been widely and long used, no cases of acute oral intoxication 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 available data, the classification criteria are not met.


Skin irritation studies have been conducted in rabbits for solid sodium carbonate according to OECD 405 (Chibanguza, 1985); on rabbits, for 50 % sodium carbonate solution, according to EPA 16 CFR 1500.3 (Rinehart, 1978); on rabbits, guinea pigs and humans, for 50 % sodium carbonate solution, according to the revised FHSA procedure proposed by the FDA (Nixon *et al.*, 1975); in humans, a patch test was performed on 98 % sodium carbonate (York *et al.*, 1996). No erythema or swelling has been observed when applied to intact skin, therefore sodium carbonate has no or low potential for skin irritation. The results of the irritant effect tests show that the substance cannot be corrosive to the skin.

#### Serious eye damage/irritation:

Causes serious eye irritation (H319).

The available eye irritation tests revealed different results.

Studies in rabbits (*New Zealand White*) using a dose of 0.1 ml of sodium carbonate monohydrate and sodium carbonate (anhydrous) resulted in the classification of irritant and severe irritant, respectively (Reinhart, WE, 1978). The study scoring system followed EPA 16 CFR 1500.42, not comparable to the CLP criteria. Studies in rabbits (*New Zealand White*) using a dose of 0.1 ml of sodium carbonate (Murphy JC *et al.*, 1982), based on the Draize methodology (comparable to the OECD 405 guideline), showed that sodium carbonate is irritating to the eyes. Based on the available test results and in accordance with the harmonized classification, the registrant has classified sodium carbonate as an eye

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irritant. Irritation test results show that the substance is unlikely to cause serious eye damage.

**Respiratory or skin sensitization:**

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

No data available on the sensitizing effect of sodium carbonate. According to point 1 of Annex XI to the REACH Regulation, testing does not appear to be scientifically necessary. The sensitizing properties of sodium carbonate are not considered, based on the physiological role of the ions present in the solution, as well as the fact that no cases of sensitization have been reported despite its long and widespread use (e.g. production of glass, soaps, detergents and other chemicals, use of in the metal, mining and pulp and paper industries) and use by consumers (cosmetics, soaps, scouring powders, soaking and washing powders, food additive).

**Germ cell mutagenicity:**

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

The 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 to have a well-functioning bioassay system, mostly bicarbonates 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 carbonate is used in cosmetics, pharmaceuticals and as a food additive in the European Union and is therefore not considered to be toxic to reproduction.

**Carcinogenicity:**

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

There is no data are available for carcinogenicity 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 cause hyperplasia or neoplastic changes.

**Reproductive toxicity:**

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

Given the physiological role of the ions, it is considered that the substance should not reach the foetus or the male and female reproductive organs after oral, dermal or inhalation exposure.

**Effects on fertility:** No reproductive toxicity data are available. According to section 1 of Annex XI of REACH, testing is not scientifically necessary as exposure to sodium carbonate will not increase systemic sodium and carbonate levels due to homeostatic regulation of both ions.


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

**STOT-single exposure:**

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

**STOT-repeated exposure:**

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

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A repeated dose inhalation study, which was not reported in sufficient detail, revealed local effects on the lungs which could be expected based on the alkaline nature of the compound. A good quality oral, dermal or inhalatory repeated dose study is not available. However, the long-term hazard of sodium for humans is well known and has been focused on the effects of sodium on the prevention and control of hypertension. Recommendations on daily dietary sodium intake were reported to be 2.0-3.0 g (diet) for a moderately restricted intake and 3.1-6.0 g (healthy people) (Fodor *et al.* 1999). Carbonate would be neutralised in the stomach by the low pH of the gastric juice. Furthermore, sodium carbonate is not expected to be systemically available in the body due to neutralisation by gastric acid or by blood. Therefore, additional testing for repeated dose toxicity is considered unnecessary for sodium carbonate. Furthermore sodium carbonate is used as a food additive which confirms that the substance has a low repeated dose toxicity. The Joint FAO/WHO Expert Committee on Food Additives considered it not necessary to derive an Acceptable Daily Intake (ADI) for the food additive sodium carbonate (JECFA, 1965).

**Aspiration hazard:**

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

**Health effects of exposure are given in section 4.2.**

**11.2 Information on other hazards**

**11.2.1. 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).

**SECTION 12: Ecological information**

**12.1. Toxicity**


The lowest L(E)C<sub>50</sub> is >100 mg/l (48h EC<sub>50</sub> study is 200 mg/l for aquatic invertebrates (*Ceriodaphnia dubia*)). Therefore sodium carbonate is not classified in accordance with Regulation (EC) No 1272/2008.

**Acute toxicity to fish:**

LC<sub>50</sub> (*Lepomis macrochirus*) 300 mg/l/96h (method in accordance with the guidelines of the Federation of Associations for Sewage and Industrial Waste) (Cairns and Scheier (1959)).

**Chronic toxicity to fish:**

According to point 1 of Annex XI to the REACH regulation, the study does not need to be performed, because sodium carbonate is present in the aqueous environment in a dissociated form. Both sodium and carbonate ions occur in nature, and their concentrations in surface waters depend on many factors: geological parameters, weather conditions and human activity. If sodium carbonate is added to an aquatic ecosystem, it is

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converted to sodium bicarbonate as the pH of the water increases. Sodium bicarbonate has a very low chronic toxicity.

**Acute toxicity to aquatic invertebrates:**

LC<sub>50</sub> (*Ceriodaphnia dubia*) 200-227 mg/l/48h (method according to EPA - Warne & Julli, 1999) (Warne MS and Schifko AD, 1999)

**Chronic toxicity to aquatic invertebrates:**

In accordance with point 1 of Annex XI of the REACH Regulation, the study does not need to be conducted as in the aquatic environment sodium carbonate is dissociated into sodium and carbonate ions. Both ions originally exist in nature, and their concentrations in surface water are dependent on various factors, such as geological parameters, weathering and human activities. If sodium carbonate is added to an aquatic ecosystem, it is converted to sodium bicarbonate as the pH of the water increases. Sodium bicarbonate has a very low chronic toxicity.

**Algae and aquatic plants:**

In accordance with point 1 of Annex XI of the REACH Regulation, the study does not need to be conducted as in the aquatic environment sodium carbonate is dissociated into sodium and carbonate ions. Both ions originally exist in nature, and their concentrations in surface water are dependent on various factors, such as geological parameters, weathering and human activities.

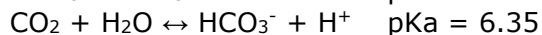
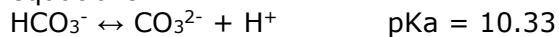
**Toxicity to birds:**

According to column 2 of Annex X of REACH, testing in birds is not required as a risk assessment based on mammalian toxicity data indicates that sodium carbonate is neutralized to sodium bicarbonate after ingestion.

**12.2. Persistence and degradability**

Sodium carbonate is an inorganic substance which cannot be oxidized or biodegraded by micro-organisms.

If carbonate is dissolved in water a re-equilibration takes place according to the following equations:



Only a small fraction of the dissolved CO<sub>2</sub> is present as H<sub>2</sub>CO<sub>3</sub>, the major part is present as CO<sub>2</sub>. The amount of CO<sub>2</sub> in water is in equilibrium with the partial pressure of CO<sub>2</sub> in the atmosphere. The CO<sub>2</sub>/HCO<sub>3</sub><sup>-</sup>/CO<sub>3</sub><sup>2-</sup> equilibria are the major buffer of the pH of freshwater.


**Degradation**

**Hydrolysis:**

In accordance with point 1 of Annex XI of the REACH Regulation, the study does not need to be conducted, because sodium carbonate dissociates in water.

**Biodegradation:**

In accordance with point 2 of Annex XI of the REACH Regulation, the ready biodegradability test, the simulation test on ultimate degradation in surface water, the sediment simulation test and the soil simulation test are not need to be conducted as the substance is inorganic.

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### 12.3. Bioaccumulative potential

When dissolved in water, sodium carbonate dissociates into sodium and carbonate ions, which are ubiquitous in living organisms. Therefore, the bioaccumulation test has no added value and is considered scientifically unjustified.

Octanol-water partition coefficient ( $K_{ow}$ ): Not applicable (sodium carbonate is a salt of an inorganic).

Bioconcentration factor (BCF): Not applicable (sodium carbonate is a salt of an inorganic).

### 12.4. Mobility in soil

If sodium carbonate is introduced into the soil, it may escape to the atmosphere as  $CO_2$  (as noted above), precipitate as metal carbonate, form complexes, or remain in solution. The high solubility in water and low vapor pressure indicate that sodium carbonate is mainly present in the aqueous environment. In water, sodium carbonate dissociates into sodium and carbonate ions, which will not adsorb to solid particles or surfaces and will not accumulate in living tissues. Both sodium and carbonate ions have a wide 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. 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).

### 12.7. Other adverse effects

No data available.

## SECTION 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:** Do not introduce into the environment. Collect spilt substance to the containers. Reused or pass in a properly labeled containers for disposal to the qualifying company.

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**Disposal methods for used packing:** Do not introduce into the environment. Packaging disposed of as waste material; pass in a properly labeled containers for disposal to the qualifying company.

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## SECTION 14: Transport information

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### 14.1. UN number or ID number

Not applicable.

### 14.2. UN proper shipping name

Not applicable.

### 14.3. Transport hazard class(es)

Not applicable.

### 14.4. Packing group

Not applicable.

### 14.5. Environmental hazards

Substance isn't dangerous for the environment in accordance with the UN Model Regulations criteria.

### 14.6. Special precautions for user

Not applicable.

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

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## SECTION 15: Regulatory information


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### 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).



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**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, 26.6.2022).

### 15.2. Chemical safety assessment

A chemical safety assessment for the substance has been carried out.

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## SECTION 16: Other information

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### The full text of statements H:

H319 - Causes serious eye irritation.

### Key to abbreviations and acronyms:

ADI - The acceptable daily intake.

b.w. - Body weight.

BLV - Biological limit values.

CAS Number - Each substance registered in the CAS Registry is assigned a CAS Registry Number. The CAS Registry Number is widely used as a unique identifier of chemical substances.

DNEL - Derived no-effect level.

EC Number - Inventory composed of three combined European lists of substances from the previous EU chemicals regulatory framework: EINECS, ELINCS and the NLP-list (no-longer polymers).

EPA - The Environmental Protection Agency.

Eye Irrit. 2 - Serious eye irritation, Hazard Category 2.

FAO - The Food and Agriculture Organization.

FDA - The United States Food and Drug Administration.

FHSA - The Federal Hazardous Substances Act.

IMO - International Maritime Organization.

Index Number - The number assigned to the chemical substance in Annex VI of the CLP Regulation.

LC<sub>50</sub> - Median lethal concentration.

LD<sub>50</sub> - Lethal dose 50 %

MMAD - Mass median aerodynamic diameters.

NOAEL - No observed adverse effect level.

NOEC - No observed effect concentration.

OECD - Organisation for Economic Cooperation and Development.

PBT - Persistent, bioaccumulative and toxic.

SD - Standard deviation.

STEL - Short-term exposure limit.


TWA - 8 hours' time-weighted average.

vPvB - Very persistent and very bioaccumulative.

WHO - World Health Organization.

**Training advice:** Before use read the SDS.



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**Sources of key data:** Producer SDS from 10<sup>th</sup> November 2011 (actualization).  
Sodium Carbonate REACH Registration Dossier (2022 Update).

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are also treated as aid to safety in transport, storage and usage of the product. This does not free the user from the responsibility of improper usage of the information above also of improper compliance with the law norms in the field.

The information contained in this safety data sheet has been prepared by the manufacturer and verified by the ISOTOP s.c. Consulting Company; **www.isotop.pl**;  
e-mail: **reach@isotop.pl**

This SDS replaces and annuls all the previous versions.  
Changes made in relation to the previous edition - sections: 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

Annex to the Safety Data Sheet is the appropriate exposure scenario.