

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

## SODIUM CARBONATE

Version 7.0

Print Date 2016/04/06

Revision date / valid from 2016/04/06

MSDS code: **MSCR100**

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

#### 1.1. Product identifier

Trade name : SODIUM CARBONATE  
 Substance name : sodium carbonate  
 Index-No. : 011-005-00-2  
 CAS-No. : 497-19-8  
 EC-No. : 207-838-8  
 EC Registration : 01-2119485498-19-xxxx

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

Use of the Substance/Mixture : Identified use: See table in front of appendix for a complete overview of identified uses.  
 Uses advised against : At this moment we have not identified any uses advised against

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

Company : Brenntag UK & Ireland  
 Albion House, Rawdon Park  
 GB LS19 7XX Leeds Yeadon  
 Telephone : +44 (0) 113 3879 200  
 Telefax : +44 (0) 113 3879 280  
 E-mail address : msds@brenntag.co.uk

#### 1.4. Emergency telephone number

Emergency telephone number : Emergency only telephone number (open 24 hours):  
 +44 (0) 1865 407333 (N.C.E.C. Culham)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements
Serious eye damage/eye irritation	Category 2	---	H319


**SODIUM CARBONATE**

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Most important adverse effects**

Human Health	:	See section 11 for toxicological information.
Physical and chemical hazards	:	See section 9 for physicochemical information.
Potential environmental effects	:	See section 12 for environmental information.

**2.2. Label elements****Labelling according to Regulation (EC) No 1272/2008**

Hazard symbols	:	
Signal word	:	Warning
Hazard statements	:	H319 Causes serious eye irritation.
Precautionary statements		
Prevention	:	P264 Wash hands thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	:	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.

**Hazardous components which must be listed on the label:**

- sodium carbonate

**2.3. Other hazards**

For Results of PBT and vPvB assessment see section 12.5.

**SECTION 3: Composition/information on ingredients****3.1. Substances**

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Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
<b>sodium carbonate</b>			
Index-No. : 011-005-00-2	<= 100	Eye Irrit.2	H319
CAS-No. : 497-19-8			
EC-No. : 207-838-8			
EC : 01-2119485498-19-xxxx			
Registration			

For the full text of the H-Statements mentioned in this Section, see Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- General advice : Take off all contaminated clothing immediately.
- If inhaled : Remove to fresh air.
- In case of skin contact : Wash off immediately with plenty of water.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.
- If swallowed : Rinse mouth with water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician immediately.
- If conscious, drink plenty of water. Do NOT induce vomiting. Call a physician immediately.

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

- Symptoms : See Section 11 for more detailed information on health effects and symptoms.
- Effects : See Section 11 for more detailed information on health effects and symptoms.

#### 4.3. Indication of any immediate medical attention and special treatment needed

- Treatment : No information available.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing : Use extinguishing measures that are appropriate to local

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media circumstances and the surrounding environment. The product itself does not burn.

Unsuitable extinguishing media : No information available.

### 5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting : Incomplete combustion may form toxic pyrolysis products.

### 5.3. Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear personal protective equipment.

Further advice : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

## SECTION 6: Accidental release measures

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

Personal precautions : Use personal protective equipment. Avoid dust formation. Avoid contact with skin and eyes. For personal protection see section 8.

### 6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

### 6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Use mechanical handling equipment. Keep in suitable, closed containers for disposal.

Further information : Treat recovered material as described in the section "Disposal considerations".

### 6.4. Reference to other sections

See Section 1 for emergency contact information.  
See Section 8 for information on personal protective equipment.  
See Section 13 for waste treatment information.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Advice on safe handling : Keep container tightly closed. Use personal protective equipment. Avoid dust formation. Avoid contact with skin, eyes and clothing. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

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Hygiene measures : Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before eating, drinking, or smoking. Provide adequate ventilation. Avoid contact with the skin and the eyes.

### 7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep in an area equipped with alkali resistant flooring. Store in original container.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Further information on storage conditions : Keep tightly closed in a dry and cool place. Avoid moisture. Product is hygroscopic.

Advice on common storage : Do not store near acids. Keep away from food, drink and animal feedingstuffs.

German storage class : 13 Non Combustible Solids

### 7.3. Specific end use(s)

Specific use(s) : Identified use: See table in front of appendix for a complete overview of identified uses.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Other Occupational Exposure Limit Values

(Additional) Information : Contains no substances with occupational exposure limit values for UK.  
Contains no substances with occupational exposure limit values for Ireland.

**Component:** sodium carbonate CAS-No. 497-19-8

#### Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL  
Workers, long-term, Inhalation : 10 mg/m<sup>3</sup>

DNEL  
Consumers, Acute - local effects, Inhalation : 10 mg/m<sup>3</sup>

#### Predicted No Effect Concentration (PNEC)

Not applicable :

**SODIUM CARBONATE****8.2. Exposure controls****Appropriate engineering controls**

Provide sufficient air exchange and/or exhaust in work rooms.

**Personal protective equipment***Respiratory protection*

Advice : Required if dust is released  
Respirator with a dust filter  
Recommended Filter type:  
Particle filter:P2  
Particle filter:P3

*Hand protection*

Advice : The glove material has to be impermeable and resistant to the product / the substance / the preparation.  
Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).  
Protective gloves should be replaced at first signs of wear.  
The following materials are suitable:

Material : butyl-rubber  
Break through time :  $\geq 8$  h  
Glove thickness : 0.5 mm

Material : polychloroprene  
Break through time :  $\geq 8$  h  
Glove thickness : 0.5 mm

Material : Nitrile rubber  
Break through time :  $\geq 8$  h  
Glove thickness : 0.35 mm

Material : Fluorinated rubber  
Break through time :  $\geq 8$  h  
Glove thickness : 0.4 mm

Material : Polyvinylchloride  
Break through time :  $\geq 8$  h  
Glove thickness : 0.5 mm

Material : Natural Rubber  
Break through time :  $\geq 8$  h  
Glove thickness : 0.5 mm

**SODIUM CARBONATE***Eye protection*

Advice : Safety goggles

*Skin and body protection*

Advice : Wear suitable protective clothing.

**Environmental exposure controls**

General advice : Do not flush into surface water or sanitary sewer system.  
Local authorities should be advised if significant spillages cannot be contained.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Form	:	crystalline or powder
Colour	:	white
Odour	:	odourless
Odour Threshold	:	Not applicable
pH	:	11.6 (100 g/l ; 20 °C)
Melting point/range	:	851 °C
Boiling point/boiling range	:	1,600 °C
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	2.53 (20 °C)
Density	:	2.53 g/cm <sup>3</sup> (20 °C)
Water solubility	:	215 g/l (20 °C)

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Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	Not applicable
Thermal decomposition	:	> 400 °C
Viscosity, dynamic	:	Not applicable
Explosive properties	:	EU legislation: Not explosive
Explosivity	:	Product is not explosive.
Oxidizing properties	:	none

**9.2. Other information**

Molecular weight	:	106 g/mol
Bulk density	:	0.5 - 0.65 kg/dm <sup>3</sup> Light soda ash
		1.1 - 1.2 kg/dm <sup>3</sup> Dense soda ash

**SECTION 10: Stability and reactivity****10.1. Reactivity**

Advice : No decomposition if stored and applied as directed.

**10.2. Chemical stability**

Advice : No decomposition if stored and applied as directed.

**10.3. Possibility of hazardous reactions**

Hazardous reactions : Product is hygroscopic. Reacts exothermic with water

**10.4. Conditions to avoid**

Conditions to avoid : Exposure to moisture  
Thermal decomposition : > 400 °C

**10.5. Incompatible materials**

Materials to avoid : Strong acids and strong bases, Zinc, Acids, Aluminium, Water

**10.6. Hazardous decomposition products**

Hazardous decomposition products : Carbon dioxide (CO<sub>2</sub>), Sodium oxide



**SODIUM CARBONATE****SECTION 11: Toxicological information****11.1. Information on toxicological effects**

<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
<b>Acute toxicity</b>		
<b>Oral</b>		
LD50	: 2800 mg/kg body weight(Rat, male and female)	
<b>Inhalation</b>		
LC50	: 2.3 mg/l (Rat; 2 h) (OECD Test Guideline 403) Inhalation may cause pain and cough.	
<b>Dermal</b>		
LD50	: > 2000 mg/kg body weight(Rabbit) (US-EPA method)	
<b>Irritation</b>		
<b>Skin</b>		
Result	: No skin irritation (Rabbit) (OECD Test Guideline 404)	
<b>Eyes</b>		
Result	: Severe eye irritation (Rabbit) (US-EPA method)	
<b>Sensitisation</b>		
Result	: not sensitizing	
<b>CMR effects</b>		
<b>CMR Properties</b>		
Carcinogenicity	: Study scientifically not justified.	
Mutagenicity	: In vitro tests did not show mutagenic effects	
Teratogenicity	: Animal testing did not show any effects on foetal development.	
Reproductive toxicity	: Study scientifically not justified.	
<b>Specific Target Organ Toxicity</b>		
<b>Single exposure</b>		

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Remark : The substance or mixture is not classified as specific target organ toxicant, single exposure.

### Repeated exposure

Remark : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Other toxic properties

#### Repeated dose toxicity

Sodium carbonate dissociates into ions that are present physiologically in relatively high levels in vertebrates. Therefore, repeated dose toxicity studies are considered (scientifically) unnecessary, in accordance with column 2 of REACH Annex VIII and IX.

#### Aspiration hazard

No aspiration toxicity classification,

## SECTION 12: Ecological information

### 12.1. Toxicity

<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
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#### Acute toxicity

##### Fish

EC50 : 300 mg/l (Lepomis macrochirus; 96 h)

#### Toxicity to daphnia and other aquatic invertebrates

200 - 227 mg/l (Freshwater invertebrates; 48 h)

##### algae

Study scientifically unjustified.

##### Bacteria

Study scientifically unjustified.

#### Acute aquatic toxicity

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Result : This product has no known ecotoxicological effects.  
Study scientifically unjustified.

### Chronic toxicity

### Chronic aquatic toxicity

Result : Study scientifically unjustified.

### 12.2. Persistence and degradability

<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
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### Persistence and degradability

#### Persistence

Result : decomposition by hydrolysis.

#### Biodegradability

Result : The methods for determining biodegradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
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### Bioaccumulation

Result : Bioaccumulation is not expected.

### 12.4. Mobility in soil

<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
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### Mobility

: study scientifically unjustified

### 12.5. Results of PBT and vPvB assessment

<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
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### Results of PBT and vPvB assessment

Result : The PBT or vPvB criteria of Annex XIII to the REACH Regulation does not apply to inorganic substances.

### 12.6. Other adverse effects

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<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
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**Additional ecological information**

Result : Do not flush into surface water or sanitary sewer system.  
Avoid subsoil penetration.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

Product : Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.

Contaminated packaging : Dispose of contaminated packaging in the same way as the product. In accordance with local and national regulations.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

**SECTION 14: Transport information**

Not dangerous goods for ADR, RID, IMDG and IATA.

**14.1. UN number**

Not applicable.

**14.2. UN proper shipping name**

Not applicable.

**14.3. Transport hazard class(es)**

Not applicable.

**14.4. Packaging group**

Not applicable.

**14.5. Environmental hazards**

Not applicable.

**14.6. Special precautions for user**

Not applicable.

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

IMDG : Not applicable.

## SECTION 15: Regulatory information

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

<b>Component:</b>	<b>sodium carbonate</b>	<b>CAS-No. 497-19-8</b>
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#### Notification status sodium carbonate:

Regulatory List	Notification	Notification number
AICS	YES	
DSL	YES	
EINECS	YES	207-838-8
ENCS (JP)	YES	(1)-164
IECSC	YES	
ISHL (JP)	YES	(1)-164
KECI (KR)	YES	KE-31380
NZIOC	YES	HSR003265
PICCS (PH)	YES	
TSCA	YES	

### 15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

## SECTION 16: Other information

#### Full text of H-Statements referred to under sections 2 and 3.

H319 Causes serious eye irritation.

#### Further information

Key literature references : Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

Other information : The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

## **SODIUM CARBONATE**

|| Indicates updated section.

**SODIUM CARBONATE**

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	8	NA	1, 2, 3, 4, 8a, 8b, 9, 22	1	NA	ES864
2	Formulation & (re)packing of substances and mixtures	3	10	NA	1, 2, 3, 5, 8a, 8b, 9, 14, 15	2	NA	ES878
3	Use in glass production	3	NA	NA	1, 2, 3, 4, 8a, 8b, 22, 23, 26	6a	NA	ES866
4	Industrial use	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 9, 10, 13, 15, 17, 18, 19, 22, 23, 26	4, 5, 6a, 6b, 6d, 7	NA	ES871
5	Professional use	22	NA	NA	1, 2, 4, 8a, 8b, 9, 10, 11, 13, 15, 19	8a, 8b, 8c, 8d, 8e, 8f, 9a, 9b	NA	ES873
6	Consumer use	21	NA	1, 2, 3, 4, 7, 8, 9a, 9b, 9c, 0, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	NA	8a, 8b, 8c, 8d, 8e, 8f, 9a, 9b	NA	ES869

## SODIUM CARBONATE

### 1. Short title of Exposure Scenario 1: Manufacture of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting</p>
Environmental Release Categories	ERC1: Manufacture of substances

### 2.1 Contributing scenario controlling environmental exposure for: ERC1

Amount used	Annual site tonnage (tons/year):	1.5 Million tonnes/year
Frequency and duration of use	Continuous exposure	Continuous release.
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Wastewater streams from production sites contain inorganic substances and are therefore not treated in sewage treatment plants
Conditions and measures related to external treatment of waste for disposal	Waste treatment	No specific waste treatment required/proposed

### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC22

Product characteristics	Physical Form (at time of use)	solid
Amount used	Not applicable	
Frequency and duration of use	Exposure duration per day	480 min
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent/minimize exposures	

### 3. Exposure estimation and reference to its source

#### Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Air	---	2.2 - 118 kg/day	---



## SODIUM CARBONATE

### Workers

ECETOC TRA Version 2 with modifications has been used  
Workplace measurements

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
---	8 hours/day, Modeled exposure data	Inhalation worker exposure	7.9mg/m <sup>3</sup>	---
PROC1	8 hours/day, Modeled exposure data	Inhalation worker exposure	0.01mg/m <sup>3</sup>	---
PROC2	8 hours/day, Modeled exposure data	Inhalation worker exposure	0.5mg/m <sup>3</sup>	---
PROC3, PROC22	8 hours/day, Modeled exposure data	Inhalation worker exposure	1mg/m <sup>3</sup>	---
PROC4, PROC8a, PROC8b, PROC9	8 hours/day, Modeled exposure data	Inhalation worker exposure	5mg/m <sup>3</sup>	---

Measured exposure data.

#### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
Not applicable

## SODIUM CARBONATE

### 1. Short title of Exposure Scenario 2: Formulation & (re)packing of substances and mixtures

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU 10: Formulation
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	ERC2: Formulation of preparations

### 2.1 Contributing scenario controlling environmental exposure for: ERC2

Amount used		5000 ton(s)/year
Frequency and duration of use	Continuous exposure	Continuous release.
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust ventilation equipped with filters.
Conditions and measures related to sewage treatment plant	Sludge Treatment	PH adjustment
Conditions and measures related to external treatment of waste for disposal	Waste treatment	No specific waste treatment required/proposed

### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

Product characteristics	Physical Form (at time of use)	solid
	During use, dust is formed.	
Frequency and duration of use	Frequency of use	8 hours/day

### 3. Exposure estimation and reference to its source

#### Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Air	---	2.7 kg/day	---

Exposure is considered negligible.

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### Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15: ECETOC TRA Version 2 with modifications has been used

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Inhalation worker exposure	0.01mg/m <sup>3</sup>	---
PROC2, PROC15	---	Inhalation worker exposure	0.5mg/m <sup>3</sup>	---
PROC3	---	Inhalation worker exposure	1mg/m <sup>3</sup>	---
PROC4, PROC5, PROC8a, PROC8b, PROC9	---	Inhalation worker exposure	5mg/m <sup>3</sup>	---
PROC14	---	Inhalation worker exposure	1mg/m <sup>3</sup>	---

#### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**SODIUM CARBONATE**

**1. Short title of Exposure Scenario 3: Use in glass production**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure                  PROC2: Use in closed, continuous process with occasional controlled exposure                  PROC3: Use in closed batch process (synthesis or formulation)                  PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises                  PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities                  PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities                  PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting                  PROC23: Open processing and transfer operations with minerals/metals at elevated temperature                  PROC26: Handling of solid inorganic substances at ambient temperature</p>
Environmental Release Categories	ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

**2.1 Contributing scenario controlling environmental exposure for: ERC6a**

Amount used	Annual amount per site	200000 ton(s)/year
Frequency and duration of use	Continuous exposure	Continuous release.
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust ventilation equipped with filters.
Conditions and measures related to sewage treatment plant	Wastewater emission controls are not applicable as there is no direct release to wastewater.	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	No specific waste treatment required/proposed

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC22, PROC23, PROC26**

Product characteristics	Physical Form (at time of use)	solid
	During use, dust is formed.	
Frequency and duration of use	Frequency of use	8 hours/day

**3. Exposure estimation and reference to its source**

**Environment**

Exposure is considered negligible.

**Workers**

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC22, PROC23: ECETOC TRA Version 2 with modifications has been used

## SODIUM CARBONATE

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Inhalation worker exposure	0.01 mg/m <sup>3</sup>	---
PROC2	---	Inhalation worker exposure	0.5 mg/m <sup>3</sup>	---
PROC3	---	Inhalation worker exposure	1 mg/m <sup>3</sup>	---
PROC4, PROC8a, PROC8b	---	Inhalation worker exposure	5 mg/m <sup>3</sup>	---
PROC22, PROC23	---	Inhalation worker exposure	1 mg/m <sup>3</sup>	---

#### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

**SODIUM CARBONATE**

1. Short title of Exposure Scenario 4: Industrial use		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure                  PROC2: Use in closed, continuous process with occasional controlled exposure                  PROC3: Use in closed batch process (synthesis or formulation)                  PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises                  PROC7: Industrial spraying                  PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities                  PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities                  PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)                  PROC10: Roller application or brushing                  PROC13: Treatment of articles by dipping and pouring                  PROC15: Use as laboratory reagent                  PROC17: Lubrication at high energy conditions and in partly open process                  PROC18: Greasing at high energy conditions                  PROC19: Hand-mixing with intimate contact and only PPE available                  PROC22: Potentially closed processing operations with minerals/metals at elevated temperature; industrial setting                  PROC23: Open processing and transfer operations with minerals/metals at elevated temperature                  PROC26: Handling of solid inorganic substances at ambient temperature</p>	
Environmental Release Categories	<p>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles                  ERC5: Industrial use resulting in inclusion into or onto a matrix                  ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)                  ERC6b: Industrial use of reactive processing aids                  ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers                  ERC7: Industrial use of substances in closed systems</p>	
2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC5, ERC6a, ERC6b, ERC6d, ERC7		
Amount used	Annual amount per site	100000 ton(s)/year
Frequency and duration of use	Continuous exposure	Continuous release.
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust ventilation equipped with filters.
Conditions and measures related to sewage treatment plant	Sludge Treatment	PH adjustment
	No specific measures required.	
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC17, PROC18, PROC19, PROC22, PROC23, PROC26		
Product characteristics	Physical Form (at time of use)	solid
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	During use, dust is formed.	
Frequency and duration of use	Frequency of use	> 4 hours/day(PROC3, PROC7, PROC9, PROC17, PROC18)

### 3. Exposure estimation and reference to its source

#### Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Air	---	---	---

Small releases might be possible.

#### Workers

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Inhalation worker exposure	0.01mg/m <sup>3</sup>	---
PROC2	solid	Inhalation worker exposure	0.5mg/m <sup>3</sup>	---
PROC3	solid	Inhalation worker exposure	1mg/m <sup>3</sup>	---
PROC4, PROC8a, PROC19	---	Inhalation worker exposure	5mg/m <sup>3</sup>	---
PROC8b, PROC9, PROC15, PROC26	solid	Inhalation worker exposure	5mg/m <sup>3</sup>	---
PROC7	---	Inhalation worker exposure	0.022mg/m <sup>3</sup>	---
PROC17, PROC18	liquid	Inhalation worker exposure	0.022mg/m <sup>3</sup>	---
PROC22, PROC23	---	Inhalation worker exposure	1mg/m <sup>3</sup>	---

### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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### 1. Short title of Exposure Scenario 5: Professional use

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8b: Wide dispersive indoor use of reactive substances in open systems</p> <p>ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p> <p>ERC8e: Wide dispersive outdoor use of reactive substances in open systems</p> <p>ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix</p> <p>ERC9a: Wide dispersive indoor use of substances in closed systems</p> <p>ERC9b: Wide dispersive outdoor use of substances in closed systems</p>

### 2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f, ERC9a, ERC9b

Amount used	Annual amount per site	100000 ton(s)/year
Frequency and duration of use	Continuous exposure	Continuous release.
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust ventilation equipped with filters.
Conditions and measures related to sewage treatment plant	Sludge Treatment	PH adjustment
	No specific measures required.	

### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19

Product characteristics	Physical Form (at time of use)	solid
	During use, dust is formed.	
Frequency and duration of use	Exposure duration per day	15 min(PROC1, PROC2)
	Exposure duration per day	> 240 min(PROC4, PROC10, PROC11)
	Exposure duration per day	15 - 60 min(PROC8a, PROC8b, PROC13, PROC15, PROC19)

### 3. Exposure estimation and reference to its source



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### Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Water	---	---	---
---	---	Air	---	---	---
---	Professional agricultural	Soil	---	0.0126kg/ha	---

Exposure is considered negligible.

### Workers

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	liquid	Inhalation worker exposure	0.0044mg/m <sup>3</sup>	---
PROC1	solid	Inhalation worker exposure	0.001mg/m <sup>3</sup>	---
PROC2, PROC3, PROC4, PROC9	liquid	Inhalation worker exposure	0.044mg/m <sup>3</sup>	---
PROC2	solid	Inhalation worker exposure	0.1mg/m <sup>3</sup>	---
PROC5	solid	Inhalation worker exposure	5mg/m <sup>3</sup>	---
PROC8a, PROC8b, PROC13, PROC15, PROC19	liquid	Inhalation worker exposure	0.088mg/m <sup>3</sup>	---
PROC8a, PROC19	solid	Inhalation worker exposure	1mg/m <sup>3</sup>	---
PROC10, PROC11	liquid	Inhalation worker exposure	0.44mg/m <sup>3</sup>	---
---	---	---	---	---

#### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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### 1. Short title of Exposure Scenario 6: Consumer use

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	<p>PC1: Adhesives, sealants  PC2: Adsorbents  PC3: Air care products  PC4: Anti-freeze and de-icing products  PC7: Base metals and alloys  PC8: Biocidal products  PC9a: Coatings and paints, thinners, paint removers  PC9b: Fillers, putties, plasters, modelling clay  PC9c: Finger paints  PC0: Other  PC11: Explosives  PC12: Fertilizers  PC13: Fuels  PC14: Metal surface treatment products, including galvanic and electroplating products  PC15: Non-metal-surface treatment products  PC16: Heat transfer fluids  PC17: Hydraulic fluids  PC18: Ink and toners  PC19: Intermediate  PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents  PC21: Laboratory chemicals  PC23: Leather tanning, dye, finishing, impregnation and care products  PC24: Lubricants, greases, release products  PC25: Metal working fluids  PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids  PC27: Plant protection products  PC28: Perfumes, fragrances  PC29: Pharmaceuticals  PC30: Photo-chemicals  PC31: Polishes and wax blends  PC32: Polymer preparations and compounds  PC33: Semiconductors  PC34: Textile dyes, finishing and impregnating products  PC35: Washing and cleaning products (including solvent based products)  PC36: Water softeners  PC37: Water treatment chemicals  PC38: Welding and soldering products (with flux coatings or flux cores), flux products  PC39: Cosmetics, personal care products  PC40: Extraction agents</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems  ERC8b: Wide dispersive indoor use of reactive substances in open systems  ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix  ERC8d: Wide dispersive outdoor use of processing aids in open systems  ERC8e: Wide dispersive outdoor use of reactive substances in open systems  ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix  ERC9a: Wide dispersive indoor use of substances in closed systems  ERC9b: Wide dispersive outdoor use of substances in closed systems</p>
Activity	Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered
<b>2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f, ERC9a, ERC9b</b>	
Amount used	The amount of substance used is not considered relevant for these operations.
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Frequency and duration of use	Continuous exposure	not relevant
<b>2.2 Contributing scenario controlling consumer exposure for: PC35: Detergent powders, PC35: Surface cleaners (powder)</b>		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%
	Physical Form (at time of use)	liquid, Solid, medium dustiness
Frequency and duration of use	Frequency of use	1 events/week
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water
<b>2.3 Contributing scenario controlling consumer exposure for: PC35: Machine dishwashing</b>		
Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product: 0% - 45%
	Physical Form (at time of use)	liquid, Solid, medium dustiness
Frequency and duration of use	Frequency of use	1 events/week
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water
<b>2.4 Contributing scenario controlling consumer exposure for: PC0, PC1, PC2, PC4, PC7, PC8, PC9a, PC11, PC12, PC14, PC15, PC16, PC17, PC18, PC19, PC20, PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29, PC30, PC32, PC33, PC34, PC36, PC37, PC40, PC39, PC38</b>		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 37%
	Physical Form (at time of use)	liquid, Solid, medium dustiness
Frequency and duration of use	Frequency of use	1 events/week
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water
<b>2.5 Contributing scenario controlling consumer exposure for: PC35: Surface cleaners (spray)</b>		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
	Physical Form (at time of use)	liquid, Solid, medium dustiness
Frequency and duration of use	Frequency of use	1 events/week
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water
<b>2.6 Contributing scenario controlling consumer exposure for: PC3</b>		
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Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.
	Physical Form (at time of use)	liquid, Solid, medium dustiness
Frequency and duration of use	Frequency of use	1 events/week
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water
<b>2.7 Contributing scenario controlling consumer exposure for: PC31</b>		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
	Physical Form (at time of use)	liquid, Solid, medium dustiness
Frequency and duration of use	Frequency of use	1 events/week
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water

### 3. Exposure estimation and reference to its source

#### Environment

Exposure is considered negligible.

#### Consumers

PC35: REACT (Reach Exposure Assessment Consumer Tool)

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC35	Laundry regular, Powder	Consumer - dermal, long-term - systemic	0.0156mg/kg bw/day	---
PC35	Laundry regular, liquid	Consumer - dermal, long-term - systemic	0.0229mg/kg bw/day	---
PC35	Laundry compact, Powder	Consumer - dermal, long-term - systemic	0.0160mg/kg bw/day	---
PC35	Laundry compact, liquid	Consumer - dermal, long-term - systemic	0.0229mg/kg bw/day	---
PC35	Laundry additive, Laundry bleaching/pre-treatment	Consumer - dermal, long-term - systemic	0.0221mg/kg bw/day	---
PC35	Hand dishwashing liquids	Consumer - dermal, long-term - systemic	0.000312mg/kg bw/day	---
PC35	Surface cleaners, gel	Consumer - dermal, long-term - systemic	0.0429mg/kg bw/day	---

### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk

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Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.