

SAFETY DATA SHEET
SODIUM PERCARBONATE COATED

Page: 1

Compilation date: 21.10.2020

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

1.1. Product identifier

Product name: SODIUM PERCARBONATE COATED

REACH registered number(s): 01-2119457268-30-XXXX

CAS number: 15630-89-4

EINECS number: 239-707-6

Product code: 8472-025 (S)

Synonyms: SODIUM CARBONATE PEROXYHYDRATE

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

Use of substance / mixture: Food bleach. Bleaching agent (laundry detergents, textile processing). Dyestuffs
oxidation reagent.

1.3. Details of the supplier of the safety data sheet

Company name: RYE OIL LTD
HARBOUR ROAD
RYE
EAST SUSSEX
TN31 7TE

Tel: 01797 223374

Fax: 01797 226991

Email: info@ryeoil.co.uk

1.4. Emergency telephone number

Emergency tel: 01797 223374 OFFICE HOURS (8.00AM TO 5.00PM)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Ox. Sol. 2: H272; Acute Tox. 4: H302; Eye Dam. 1: H318

Most important adverse effects: May intensify fire; oxidiser. Harmful if swallowed. Causes serious eye damage.

2.2. Label elements

Label elements:

Hazard statements: * H272: May intensify fire; oxidiser.

H302: Harmful if swallowed.

H318: Causes serious eye damage.

Signal words: Danger

[cont...]

SAFETY DATA SHEET

SODIUM PERCARBONATE COATED

Page: 2

Hazard pictograms: GHS03: Flame over circle

GHS07: Exclamation mark

GHS05: Corrosion



Precautionary statements: * P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P221: Take any precaution to avoid mixing with combustibles.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER/doctor/physician.

P501: Dispose of contents/container to hazardous or special waste collection point.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.1. Substances

Chemical identity: SODIUM PERCARBONATE COATED

CAS number: 15630-89-4

EINECS number: 239-707-6

REACH registered number(s): 01-2119457269-30-XXXX

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

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

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be pain and redness. The eyes may water profusely. There may be severe pain. The vision may become blurred. May cause permanent damage.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur.

[cont...]

SAFETY DATA SHEET
SODIUM PERCARBONATE COATED

Page: 3

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

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

Immediate / special treatment: Eye bathing equipment should be available on the premises.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Do not create dust.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS. Refer to section 13 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Avoid the formation or spread of dust in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed.

7.3. Specific end use(s)

Specific end use(s): No special requirement.

[cont...]

SAFETY DATA SHEET
SODIUM PERCARBONATE COATED

Page: 4

Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits:

Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	-	-	5 mg/m3	-

DNEL/PNEC Values

DNEL / PNEC No data available.

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Self-contained breathing apparatus must be available in case of emergency. Respiratory protective device with particle filter.

Hand protection: Protective gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Protective clothing.

Environmental: Refer to specific Member State legislation for requirements under Community environmental legislation.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Crystals

Colour: White

Odour: Characteristic odour

Evaporation rate: No data available.

Oxidising: Oxidising (by EC criteria)

Solubility in water: Soluble

Viscosity: No data available.

Boiling point/range°C: No data available.

Flammability limits %: lower: No data available.

Flash point°C: No data available.

Autoflammability°C: No data available.

Relative density: 0.8-1.0

VOC g/l: No data available.

Melting point/range°C: No data available.

upper: No data available.

Part.coeff. n-octanol/water: No data available.

Vapour pressure: No data available.

pH: 10.5

9.2. Other information

Other information: No data available.

[cont...]

SAFETY DATA SHEET
SODIUM PERCARBONATE COATED

Page: 5

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.
Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat. Sources of ignition.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

Section 11: Toxicological information

11.1. Information on toxicological effects

Toxicity values:

Route	Species	Test	Value	Units
DERMAL	RBT	LD50	>2000	mg/kg
ORL	RAT	LD50	1050	mg/kg
DUST/MIST	RAT	4H LC50	4.58	mg/kg

Relevant hazards for substance:

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	ING	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated

Symptoms / routes of exposure

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be pain and redness. The eyes may water profusely. There may be severe pain. The vision may become blurred. May cause permanent damage.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

[cont...]

SAFETY DATA SHEET
SODIUM PERCARBONATE COATED

Page: 6

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity values:

Species	Test	Value	Units
DAPHNIA	48H EC50	4.9	mg/l
FATHEAD MINNOWS	96H LC50	70.7	mg/l

12.2. Persistence and degradability

Persistence and degradability: Not biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential: No bioaccumulation potential.

12.4. Mobility in soil

Mobility: Soluble in water.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Toxic to aquatic organisms.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Deposit into or on to land (e.g. landfill, etc.)

Disposal of packaging: Dispose of in a regulated landfill site or other method for hazardous or toxic wastes.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

14.1. UN number

UN number: UN3378

14.2. UN proper shipping name

Shipping name: SODIUM CARBONATE PEROXYHYDRATE

14.3. Transport hazard class(es)

Transport class: 5.1

14.4. Packing group

Packing group: II

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SAFETY DATA SHEET
SODIUM PERCARBONATE COATED

Page: 7

14.5. Environmental hazards

Environmentally hazardous: No

Marine pollutant: No

14.6. Special precautions for user

Special precautions: No special precautions.

Tunnel code: E

Transport category: 2

Section 15: Regulatory information

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

Specific regulations: This product is a Seveso category/named substance in Annex I of Council Directive 96/82/EC.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

This safety data sheet is prepared in accordance with Commission Regulation (EC) No 1272/2008.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: H272: May intensify fire; oxidiser.

H302: Harmful if swallowed.

H318: Causes serious eye damage.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

ANNEX

Exposure Scenario Format (1) addressing uses *carried out by workers*

1 Exposure scenario (1)	
Manufacture of sodium percarbonate	
use descriptors related to the life cycle stage	SU8; PROC1/2/4/8b/9; ERC1
Name of contributing environmental scenario (1) and corresponding ERC	Manufacture of substances (ERC1)
List of names of contributing worker scenarios (2) and corresponding PROCs	<ol style="list-style-type: none"> 1. Use in closed process, no likelihood of exposure (PROC1) 2. Use in closed, continuous process with occasional controlled exposure) (PROC2) 3. Use in batch and other process [synthesis] where opportunity for exposure arises (PROC4) 4. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities (PROC8b) 5. Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)
2.1 Contributing scenario (1) controlling environmental exposure	
Product characteristics	
Product related conditions, e.g. the concentration of the substance in a mixture; viscosity of product; package design affecting exposure	Solid
Amounts used	
Daily and annual amount per site (for uses in industrial setting) or daily and annual amount for wide disperse uses;	< 50,000 tonnes/year.
Frequency and duration of use	
Intermittent (used < 12 times per year for not more than 24 h) or continuous use/release	Emission days per site: 330 to 360 days/year
Environment factors not influenced by risk management	
Flow rate of receiving surface water (m3/d, usually 18,000 m3/d for the standard town by default; please note: the default flow rate will be rarely changeable for downstream uses.	Flow rate of receiving surface water: 18,000 m3/d
Other given operational conditions affecting environmental exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process (via air and waste water); dry or water based processes; conditions related to temperature and pressure; indoor or outdoor use of products; work in confined area or open air;	Wastewater generated during manufacture should be treated on-site, e.g. thermally or chemically, recycled on-site in other processes, or sent to a municipal wastewater treatment plant. Water flow varies considerably among the EU manufacturing sites. Waste gases should be cleaned by passing through dust filters or wet scrubbers.
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure to the environment; this includes in particular conditions ensuring	Not applicable.

rigorous containment; performance of the containment to be specified (e.g. by quantification of a release factor in section 9.x.2 of the CSR);	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Technical measures, e.g. on-site waste water and waste treatment techniques, scrubbers, filters and other technical measures aiming at reducing releases to air, sewage system, surface water or soil; this includes strictly controlled conditions (procedural and control technology) to minimise emissions; specify effectiveness of measures; specify the size of industrial sewage treatment plant (m ³ /d), degradation effectiveness and sludge treatment (if applicable);	Wastewater is treated in chemical/biological on-site or municipal wastewater treatment plants. With minimum 95 % reduction efficiency for thermal treatment of wastewater and approximately 90 % reduction efficiency for wastewater collection and conventional treatment. Waste air has to be cleaned by passing through dust filters or wet scrubbers. All relevant soil surfaces in the facility have to be covered to avoid drainage of substance into soil.
Organizational measures to prevent/limit release from site	
Specific organisational measures or measures needed to support the functioning of particular technical measures. Those measures need to be reported in particular for demonstrating strictly controlled conditions.	Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures.
Conditions and measures related to municipal sewage treatment plant	
Size of municipal sewage system/treatment plant (m ³ /d); specify degradation effectiveness; sludge treatment technique (disposal or recovery); measures to limit air emissions from sewage treatment (if applicable); please note: the default size of the municipal STP (2000 m ³ /d) will be rarely changeable for downstream uses.	Not applicable.
Conditions and measures related to external treatment of waste for disposal	
Fraction of used amount transferred to external waste treatment for disposal; type of suitable treatment for waste generated by workers uses, e.g. hazardous waste incineration, chemical-physical treatment for emulsions, chemical oxidation of aqueous waste; specify effectiveness of treatment;	Contaminated packaging material is decontaminated and deposited or incinerated. Solid waste substance is transferred into wastewater.
Conditions and measures related to external recovery of waste	
Fraction of used amount transferred to external waste treatment for recovery: specify type of suitable recovery.	Recycling of the process wastewater in other processes results in practically zero emission into the environment
2.2 Contributing scenario (2) controlling worker exposure for industrial use of formulation preparations in a closed system	
All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical. PROC 1, 2, 4, 8b, 9;	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of	Solid

dustiness), package design affecting exposure	
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for assessment of worker's exposure	Not applicable
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	220 days/year for each worker (EC, 2008b, p. 8) 8 hours/day
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	Not applicable
Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	Indoors
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes conditions ensuring rigorous containment; performance of containment to be specified (e.g. by quantification of residual losses or exposure)	The majority of the processes are run in closed systems, even with some under pressure
Technical conditions and measures to control dispersion from source towards the worker	
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure	Local exhaust ventilation with an efficiency of 90% is required for manufacturing stages where solid substance is handled.
Organisational measures to prevent /limit releases, dispersion and exposure	
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating strictly controlled conditions (to justify exposure based waiving).	The substance is handled directly only by trained workers Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures or if there is a risk of the occupational exposure limit being exceeded.
Conditions and measures related to personal protection, hygiene and health evaluation	
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant)	<ol style="list-style-type: none"> 1. Respiratory protection: Wearing a P2 dust mask with an efficiency of 90% is required in situations with elevated airborne dust concentrations occur, such as during filter change. 2. Hand protection: Wearing of permeation resistant gloves with suitable materials for safety gloves is required. Suitable materials are PVC, Neoprene, Natural rubber. 3. Eye protection: Wearing of eye/face protection is required. Chemical goggles should be consistent with EN 166 or equivalent. 4. Skin and body protection: Wearing of suitable protective clothing is required. 5. Hygiene measures: Keep away from foodstuffs, drinks and tobacco. Wash

	hands before breaks and at end of work. Keep work clothes separate. Take off immediately all contaminated clothing. Wash thoroughly after open handling of the product.
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3 Exposure information and relevance to its source

[illegible]

ERC1, Manufacture of substances

Environmental emissions

Sodium percarbonate rapidly dissolves in water and dissociates into sodium ions, carbonate ions and hydrogen peroxide. The high water solubility and low vapour pressure indicate that sodium carbonate will be found predominantly in the aquatic environment. Volatilisation of hydrogen peroxide from surface waters and moist soil is expected to be very low, while it is expected to be highly mobile in soil. It can be concluded that the aquatic compartment is the main compartment for sodium carbonate and hydrogen peroxide.

The assessment of potential environmental risks is based on hydrogen peroxide which is the adverse agent released by the dissociation of sodium percarbonate in water. PNEC for sodium percarbonate for risk characterisation can be derived based on PNEC of hydrogen peroxide. The calculated PECs of hydrogen peroxide representing the conditions at the manufacturing sites in the EU did not exceed the values given below.

Exposure estimate in sewage treatment plants (STP)

PEC in sewage (mg/l)	PNEC in sewage (mg/l)	RCR in sewage
<0.013 mg/L (hydrogen peroxide)	4.66 mg/L (hydrogen peroxide)	No risk

Exposure estimate in aquatic compartment

PNEC in freshwater= 0.01 mg/l (hydrogen peroxide)

PNEC in marine water= 0.01 mg/l (hydrogen peroxide)

PNEC in freshwater sediments= not applicable

PNEC in marine water sediments: not applicable Note: No exposure of the sediment compartment is expected, and a prediction of exposure concentrations is not necessary

PEC in freshwater(mg/l)	PEC in marine water (mg/l)	PEC in freshwater sediments (mg/kg d.w)	PEC in marine water sediments (mg/kg d.w)	RCR in freshwater	RCR in marine water	RCR in freshwater sediments	RCR in freshwater sediments
<0.001	<0.001	Not applicable	Not applicable	No risk	No risk	No risk	No risk

Exposure estimate in terrestrial compartment

No exposure of the terrestrial environment to sodium percarbonate is expected from its identified uses. Moreover, the substance is unstable under environmental conditions and rapidly dissociates into hydrogen peroxide and sodium carbonate. Therefore, there is no need to derive a $PNEC_{soil}$ for the terrestrial compartment.

PEC in soil (mg/kg d.w)	PNEC(soil) mg/kg dw	RCR in soil
Not applicable	Not applicable	No risk

Exposure estimate in atmospheric compartment

Not applicable. There will be negligible release of the substance into the atmosphere due to its inorganic nature

PEC	PNEC	RCR
Not applicable	Not applicable	No risk

Exposure estimate relevant for the food chain (secondary poisoning)

No secondary poisoning due to the use of sodium percarbonate is expected,

Information for contributing scenario(2)	
Scenario 1	Scenario 2
Scenario 3	Scenario 4
Scenario 5	Scenario 6
Scenario 7	Scenario 8
Scenario 9	Scenario 10
Scenario 11	Scenario 12
Scenario 13	Scenario 14
Scenario 15	Scenario 16
Scenario 17	Scenario 18
Scenario 19	Scenario 20
Scenario 21	Scenario 22
Scenario 23	Scenario 24
Scenario 25	Scenario 26
Scenario 27	Scenario 28
Scenario 29	Scenario 30
Scenario 31	Scenario 32
Scenario 33	Scenario 34
Scenario 35	Scenario 36
Scenario 37	Scenario 38
Scenario 39	Scenario 40
Scenario 41	Scenario 42
Scenario 43	Scenario 44
Scenario 45	Scenario 46
Scenario 47	Scenario 48
Scenario 49	Scenario 50
Scenario 51	Scenario 52
Scenario 53	Scenario 54
Scenario 55	Scenario 56
Scenario 57	Scenario 58
Scenario 59	Scenario 60
Scenario 61	Scenario 62
Scenario 63	Scenario 64
Scenario 65	Scenario 66
Scenario 67	Scenario 68
Scenario 69	Scenario 70
Scenario 71	Scenario 72
Scenario 73	Scenario 74
Scenario 75	Scenario 76
Scenario 77	Scenario 78
Scenario 79	Scenario 80
Scenario 81	Scenario 82
Scenario 83	Scenario 84
Scenario 85	Scenario 86
Scenario 87	Scenario 88
Scenario 89	Scenario 90
Scenario 91	Scenario 92
Scenario 93	Scenario 94
Scenario 95	Scenario 96
Scenario 97	Scenario 98
Scenario 99	Scenario 100

The exposure estimation tool ECETOC TRA was used for the assessment of exposure.

The risk characterisation ratio (RCR) is the quotient of the refined exposure estimate and the respective DNEL (derived no-effect level), and has to be below 1 to demonstrate a safe use.

DNEL Inhalative = 5 mg/m3.

DNEL Dermal = 12.8 mg/cm2

Process Categories	Inhalative exposure estimate (mg/m3)	dermal exposure estimate (mg/cm2)	RCR - inhalation	RCR-dermal	RCR - Total
1	0.01	0.1	No risk	No risk	No risk
2	0.01	0.2	No risk	No risk	No risk
4	0.5	1	No risk	No risk	No risk
8b	0.1	1	No risk	No risk	No risk
9	0.1	1	No risk	No risk	No risk

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below:

Inhalative DNEL= 5 mg/m3.

Dermal DNEL= 12.8 mg/cm2

If measured data are not available, the DU may make use of an appropriate scaling tool such as **ECETOC TRA** www.ecetoc.org to estimate the associated exposure.

Important note: According to R.14 guidance, acute exposure levels can be derived by multiplying long-term exposure estimates by a factor of 2. The DNEL given above is for long term effects, a DNEL for acute effects is also available. By demonstrating a safe use when comparing exposure estimates with the long-term DNEL, the acute DNEL is therefore also covered.

Exposure Scenario Format (1) addressing uses *carried out by workers*

2 Exposure scenario (2)

Formulation of mixtures containing sodium percarbonate

use descriptors related to the life cycle stage	SU3/10; PROC1/2/3/4/5/8a/8b/9/14; PC8/14/15/20/25/34/35/36/37/39;
Name of contributing environmental scenario (1) and corresponding ERC	Formulation of preparations (ERC2); Industrial use of reactive processing aid(ERC6b); Industrial use of substances in closed systems(ERC7);
List of names of contributing worker scenarios (2) and corresponding PROCs	<ol style="list-style-type: none"> 1. Use in closed process, no likelihood of exposure (PROC 1); 2. Use in closed, continuous process with occasional controlled exposure (e.g. sampling) (PROC 2); 3. Use in closed batch process, synthesis or formulation (PROC 3); 4. Use in batch and other process [synthesis] where opportunity for exposure arises(PROC 4); 5. Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (PROC 5); 6. Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at non-dedicated facilities(PROC 8a); 7. Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at dedicated facilities(PROC 8b); 8. Transfer of substance or preparation into small containers [dedicated filling line, including weighing] (PROC 9);

	9. Production of preparations or articles by tableting, compression, extrusion, pelletisation(PROC 14);
2.1 Contributing scenario (1) controlling environmental exposure	
Product characteristics	
Product related conditions, e.g. the concentration of the substance in a mixture; viscosity of product; package design affecting exposure	Solid; Formulated mixtures may contain up to 25% sodium percarbonate.
Amounts used	
Daily and annual amount per site (for uses in industrial setting) or daily and annual amount for wide disperse uses;	<15,000 tonnes/year (a specific assessment of environmental concentrations has to be performed for sites using more sodium percarbonate per year)
Frequency and duration of use	
Intermittent (used < 12 times per year for not more than 24 h) or continuous use/release	Emission days per site: 300 days/year
Environment factors not influenced by risk management	
Flow rate of receiving surface water (m3/d, usually 18,000 m3/d for the standard town by default; please note: the default flow rate will be rarely changeable for downstream uses.	Flow rate of receiving surface water: 18,000 m3/d
Other given operational conditions affecting environmental exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process (via air and waste water); dry or water based processes; conditions related to temperature and pressure; indoor or outdoor use of products; work in confined area or open air;	Wastewater generated during formulation should be treated on-site or sent to a municipal wastewater treatment plant. A dilution by a factor of 10 is taken into account in the generic calculation of PECs. Waste gases should be cleaned by passing through dust filters or wet scrubbers.
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure to the environment; this includes in particular conditions ensuring rigorous containment; performance of the containment to be specified (e.g. by quantification of a release factor in section 9.x.2 of the CSR);	Not applicable.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Technical measures, e.g. on-site waste water and waste treatment techniques, scrubbers, filters and other technical measures aiming at reducing releases to air, sewage system, surface water or soil; this includes strictly controlled conditions (procedural and control technology) to minimise emissions; specify effectiveness of measures; specify the size of industrial sewage treatment plant (m3/d), degradation effectiveness and sludge treatment (if applicable);	Wastewater is treated in chemical/biological on-site or municipal wastewater treatment plants. Waste air has to be cleaned by passing through dust filters or wet scrubbers. All relevant soil surfaces in the facility have to be covered to avoid drainage of substance into soil.
Organizational measures to prevent/limit release from site	
Specific organisational measures or measures needed to support the functioning of particular technical measures. Those measures need to be reported in particular for demonstrating strictly controlled conditions.	Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures.

Conditions and measures related to municipal sewage treatment plant	
Size of municipal sewage system/treatment plant (m ³ /d); specify degradation effectiveness; sludge treatment technique (disposal or recovery); measures to limit air emissions from sewage treatment (if applicable); please note: the default size of the municipal STP (2000 m ³ /d) will be rarely changeable for downstream uses.	Not applicable.
Conditions and measures related to external treatment of waste for disposal	
Fraction of used amount transferred to external waste treatment for disposal; type of suitable treatment for waste generated by workers uses, e.g. hazardous waste incineration, chemical-physical treatment for emulsions, chemical oxidation of aqueous waste; specify effectiveness of treatment;	Contaminated packaging material is decontaminated and deposited or incinerated. Solid waste substance is transferred into wastewater. Reasonable worst case emission fraction for wastewater is 2% of annual tonnage, i.e. 300 tonnes/year
Conditions and measures related to external recovery of waste	
Fraction of used amount transferred to external waste treatment for recovery: specify type of suitable recovery.	Not applicable.
2.2 Contributing scenario (2) controlling worker exposure for industrial use of formulation preparations in a closed system	
All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical. PROC1/2/3/4/5/8a/8b/9/14;	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Solid Formulated mixtures may contain up to 25% sodium percarbonate.
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for assessment of worker's exposure	Not applicable
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	220 days/year for each worker (EC, 2008b, p. 8); 8 hours/day
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	Not applicable
Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	Indoors
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes conditions ensuring rigorous containment; performance of containment to be specified (e.g. by	Not applicable

quantification of residual losses or exposure)		
Technical conditions and measures to control dispersion from source towards the worker		
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure		Good general and local exhaust ventilation with an efficiency of 90% is recommended for formulation.
Organisational measures to prevent /limit releases, dispersion and exposure		
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating strictly controlled conditions (to justify exposure based waiving).		Organisational measures: Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures or if there is a risk of the occupational exposure limit being exceeded.
Conditions and measures related to personal protection, hygiene and health evaluation		
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant)		<div>1. Respiratory protection: Wearing a P2 dust mask with an efficiency of 90% is required in situations with elevated airborne dust concentrations occur, such as during filter change.</div> <div>2. Hand protection: Wearing of permeation resistant gloves with suitable materials for safety gloves is required. Suitable materials are PVC, Neoprene, Natural rubber.</div> <div>3. Eye protection: Wearing of eye/face protection is required. Chemical goggles should be consistent with EN 166 or equivalent.</div> <div>4. Skin and body protection: Wearing of suitable protective clothing is required.</div> <div>5. Hygiene measures: Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work. Keep work clothes separate. Take off immediately all contaminated clothing. Wash thoroughly after open handling of the product.</div>
3 Exposure information and relevance to its source		
Information for contributing scenario(1)		
ERC 2, Formulation of preparations. ERC 6b, Industrial use of reactive processing aid. ERC 7, Industrial use of substances in closed systems.		
Environmental emissions		
Due to the nature of the substance it is expected that the release of sodium percarbonate at formulation sites occurs in a similar manner as at manufacture sites. Thus, environmental emissions via the wastewater are expected. Environmental releases to the atmosphere are avoided by the treatment of exhaust air. Releases to the soil are insignificant. The assessment of potential environmental risks is based on hydrogen peroxide which is the adverse agent released by the dissociation of sodium percarbonate in water. The generic environmental exposure scenario (15,000 tonnes/year, 300 release days, 2% release to wastewater, onsite treatment in biological WWTP with 2,000 m³/day capacity, dilution capacity of 10) results in PECs given below.		
Exposure estimate in sewage treatment plants (STP)		
PEC in sewage (mg/l)	PNEC in sewage (mg/l)	RCR in sewage
1 mg/L (hydrogen peroxide)	4.66 mg/L (hydrogen peroxide)	No risk
Exposure estimate in aquatic compartment		
PNEC in freshwater= 0.01 mg/l (hydrogen peroxide) PNEC in marine water: 0.01 mg/l (hydrogen peroxide) PNEC in freshwater sediments= not applicable PNEC in marine water sediments: not applicable Note: No exposure of the sediment compartment is expected and a prediction of exposure concentrations is not necessary		

PEC in freshwater(mg/l)	PEC in marine water (mg/kg d.w.)	PEC in freshwater sediments (mg/kg d.w)	PEC in marine water sediments (mg/kg d.w)	RCR in freshwater	RCR in marine water	RCR in freshwater sediments	RCR in freshwater sediments
0.0031	0.0031	Not applicable	Not applicable	No risk	No risk	No risk	No risk

Exposure estimate in terrestrial compartment

No exposure of the soil compartment to sodium percarbonate resulting from the formulation of the substance is expected and exposure concentrations need not be estimated.

PEC in soil (mg/kg d.w)	PNEC(soil) mg/kg dw	RCR in soil
Not applicable	Not applicable	No risk

Exposure estimate in atmospheric compartment

Not applicable. There will be negligible release of the substance into the atmosphere due to its inorganic nature

PEC	PNEC	RCR
Not applicable	Not applicable	No risk

Exposure estimate relevant for the food chain (secondary poisoning)

No exposure of humans via the environment is anticipated

Information for contributing scenario(2)

The exposure estimation tool ECETOC TRA was used for the assessment of exposure.

The risk characterisation ratio (RCR) is the quotient of the refined exposure estimate and the respective DNEL (derived no-effect level), and has to be below 1 to demonstrate a safe use.

Inhalative DNEL= 5 mg/m3.

Dermal DNEL= 12.8 mg/cm2

Process category	Inhalative exposure estimate (mg/m3)	Dermal exposure estimate(mg/cm2)	RCR - inhalation	RCR-dermal	RCR - Total
1	0.01	0.1	No risk	No risk	No risk
2	0.01	0.2	No risk	No risk	No risk
3	0.1	0.1	No risk	No risk	No risk
4	0.5	1	No risk	No risk	No risk
5	0.5	2	No risk	No risk	No risk
8a	0.5	1	No risk	No risk	No risk
8b	0.1	1	No risk	No risk	No risk
9	0.1	1	No risk	No risk	No risk
14	0.1	0.5	No risk	No risk	No risk

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below:

Inhalative DNEL= 5 mg/m3.

Dermal DNEL= 12.8 mg/cm2

If measured data are not available, the DU may make use of an appropriate scaling tool such as **ECETOC TRA** www.ecetoc.org to estimate the associated exposure.

Important note: According to R.14 guidance, acute exposure levels can be derived by multiplying long-term exposure estimates

by a factor of 2. The DNEL given above is for long term effects, a DNEL for acute effects is also available. By demonstrating a safe use when comparing exposure estimates with the long-term DNEL, the acute DNEL is therefore also covered.

Exposure Scenario Format (1) addressing uses *carried out by workers*

3 Exposure scenario (3)	
Industrial and professional use of cleaning products and other mixtures containing sodium percarbonate	
use descriptors related to the life cycle stage	SU1/5/22; PROC2/4/8a/8b/9/10/11/13/15/19; PC8/14/15/20/25/34/35/36/37/39;
Name of contributing environmental scenario (1) and corresponding ERC	Wide dispersive indoor use of processing aids in open systems (ERC8a); Wide dispersive indoor use of reactive substances in open systems (ERC8b); Wide dispersive outdoor use of reactive substances in open systems (ERC8e);
List of names of contributing worker scenarios (2) and corresponding PROCs	<ol style="list-style-type: none"> 1. Use in closed, continuous process with occasional controlled exposure (PROC 2); 2. Use in batch and other process [synthesis] where opportunity for exposure arises (PROC 4); 3. Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at non-dedicated facilities(PROC 8a); 4. Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at dedicated facilities(PROC 8b); 5. Transfer of substance or preparation into small containers (dedicated filling line, in-cluding weighing) (PROC 9) 6. Use as laboratory agent (PROC 15); <p>Exposure to hydrogen peroxide in solutions:</p> <ol style="list-style-type: none"> 7. Roller application or brushing (PROC 10); 8. Non-industrial spraying (PROC 11); 9. Treatment of articles by dipping and pouring (PROC 13); 10. Hand-mixing with intimate contact and only PPE available (PROC 19);
2.1 Contributing scenario (1) controlling environmental exposure	
Product characteristics	
Product related conditions, e.g. the concentration of the substance in a mixture; viscosity of product; package design affecting exposure	Solid; Formulated mixtures may contain up to 25% sodium percarbonate; some bleaching products may contain higher amounts of sodium percarbonate.
Amounts used	
Daily and annual amount per site (for uses in industrial setting) or daily and annual amount for wide disperse uses;	Wide dispersive use; total EU tonnage is 250,000 tonnes/year
Frequency and duration of use	
Intermittent (used < 12 times per year for not more than 24 h) or continuous use/release	Emission days per site: 360 days/year
Environment factors not influenced by risk management	
Flow rate of receiving surface water (m3/d, usually 18,000 m3/d for the standard town by default; please note: the default flow rate will be rarely changeable for downstream uses.	Flow rate of receiving surface water: 18,000 m3/d

Other given operational conditions affecting environmental exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process (via air and waste water); dry or water based processes; conditions related to temperature and pressure; indoor or outdoor use of products; work in confined area or open air;	The release fraction for wastewater is 100%. Wastewater generated during identified use is sent to an on-site or municipal wastewater treatment plant. A wastewater flow of 2000 m ³ /day and a dilution by a factor of 10 is taken into account in the generic calculation of PECs.
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure to the environment; this includes in particular conditions ensuring rigorous containment; performance of the containment to be specified (e.g. by quantification of a release factor in section 9.x.2 of the CSR);	Not applicable.
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Technical measures, e.g. on-site waste water and waste treatment techniques, scrubbers, filters and other technical measures aiming at reducing releases to air, sewage system, surface water or soil; this includes strictly controlled conditions (procedural and control technology) to minimise emissions; specify effectiveness of measures; specify the size of industrial sewage treatment plant (m ³ /d), degradation effectiveness and sludge treatment (if applicable);	Wastewater is treated in chemical/biological on-site or municipal wastewater treatment plants. All relevant soil surfaces in the facility have to be covered to avoid drainage of substance into soil.
Organizational measures to prevent/limit release from site	
Specific organisational measures or measures needed to support the functioning of particular technical measures. Those measures need to be reported in particular for demonstrating strictly controlled conditions.	Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures.
Conditions and measures related to municipal sewage treatment plant	
Size of municipal sewage system/treatment plant (m ³ /d); specify degradation effectiveness; sludge treatment technique (disposal or recovery); measures to limit air emissions from sewage treatment (if applicable); please note: the default size of the municipal STP (2000 m ³ /d) will be rarely changeable for downstream uses.	Not applicable.
Conditions and measures related to external treatment of waste for disposal	
Fraction of used amount transferred to external waste treatment for disposal; type of suitable treatment for waste generated by workers uses, e.g. hazardous waste incineration, chemical-physical treatment for emulsions, chemical oxidation of aqueous waste; specify effectiveness of treatment;	Contaminated packaging material is disposed of properly. Reasonable worst case emission fraction for wastewater is 100% of annual tonnage, i.e. 250,000 tonnes/year

Conditions and measures related to external recovery of waste	
Fraction of used amount transferred to external waste treatment for recovery: specify type of suitable recovery.	Not applicable.
2.2 Contributing scenario (2) controlling worker exposure for industrial use of formulation preparations in a closed system	
All Process Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical. PROC2/4/8a/8b/9/10/11/13/15/19;	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Solid Formulated mixtures may contain up to 25% sodium percarbonate; some bleaching products may contain higher amounts of sodium percarbonate.
Amounts used	
Amounts used at a workplace (per task or per shift); note: sometimes this information is not needed for assessment of worker's exposure	Not applicable
Frequency and duration of use/exposure	
Duration per task/activity (e.g. hours per shift) and frequency (e.g. single events or repeated) of exposure	220 days/year for each worker (EC, 2008b, p. 8); 8 hours/day
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed as a result of the nature of the activity	Not applicable
Other given operational conditions affecting workers exposure	
Other given operational conditions: e.g. technology or process techniques determining the initial release of substance from process into workers environment; room volume, whether the work is carried out outdoors/indoors, process conditions related to temperature and pressure.	indoors
Technical conditions and measures at process level (source) to prevent release	
Process design aiming to prevent releases and hence exposure of workers; this in particular includes conditions ensuring rigorous containment; performance of containment to be specified (e.g. by quantification of residual losses or exposure)	Not applicable
Technical conditions and measures to control dispersion from source towards the worker	
Engineering controls, e.g. exhaust ventilation, general ventilation; specify effectiveness of measure	Local exhaust ventilation with an efficiency of 90% may be present.
Organisational measures to prevent /limit releases, dispersion and exposure	
Specific organisational measures or measures needed to support the functioning of particular technical measures (e.g. training and supervision). Those measures need to be reported in particular for demonstrating strictly	Organisational measures: Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures or if there is a risk of the occupational exposure limit being exceeded.

controlled conditions (to justify exposure based waiving).							
Conditions and measures related to personal protection, hygiene and health evaluation							
Personal protection, e.g. wearing of gloves, face protection, full body dermal protection, goggles, respirator; specify effectiveness of measure; specify the suitable material for the PPE (where relevant) and advise how long the protective equipment can be used before replacement (if relevant)	<div>1. Respiratory protection: Respiratory protection with an efficiency of 90% is necessary when aqueous solutions of sodium percarbonate are used for non-industrial spraying.</div> <div>2. Hand protection: Wearing of permeation resistant gloves with suitable materials for safety gloves is recommended. Suitable materials are PVC, Neoprene, Natural rubber</div> <div>3. Eye protection: Wearing of eye/face protection is recommended. Chemical goggles should be consistent with EN 166 or equivalent.</div> <div>4. Skin and body protection: Wearing of suitable protective clothing is recommended.</div> <div>5. Hygiene measures: Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work. Keep work clothes separate. Take off immediately all contaminated clothing. Wash thoroughly after open handling of the product.</div>						
3 Exposure information and relevance to its source							
Information for contributing scenario(1)							
ERC 8a, Wide dispersive indoor use of processing aids in open systems							
ERC 8b, Wide dispersive indoor use of reactive substances in open systems							
ERC 8e, Wide dispersive outdoor use of reactive substances in open systems							
Environmental emissions							
Nearly 100 % of the amount of sodium percarbonate contained in the cleaning products used by industrial and professional users will be released into the sewer system as an aqueous solution after use.							
The assessment of potential environmental risks is based on hydrogen peroxide which is the adverse agent released by the dissociation of sodium percarbonate in water. The generic environmental exposure scenario (50 tonnes/year, 365 release days, 100% release to wastewater, onsite treatment in biological WWTP with 2,000 m³/day capacity, dilution capacity of 10) results in PECs given below:							
Exposure estimate in sewage treatment plants (STP)							
PEC in sewage (mg/l)	PNEC in sewage (mg/l)	RCR in sewage					
0.004 (hydrogen peroxide)	4.66 mg/L (hydrogen peroxide)	No risk					
Exposure estimate in aquatic compartment							
PNEC in freshwater= 0.01 mg/l (hydrogen peroxide)							
PNEC in marine water: 0.01 mg/l (hydrogen peroxide)							
PNEC in freshwater sediments= not applicable							
PNEC in marine water sediments: not applicable							
Note: No exposure of the sediment compartment is expected and a prediction of exposure concentrations is not necessary							
PEC in freshwater(mg/l)	PEC in marine water (mg/kg d.w.)	PEC in freshwater sediments (mg/kg d.w)	PEC in marine water sediments (mg/kg d.w)	RCR in freshwater	RCR in marine water	RCR in freshwater sediments	RCR in freshwater sediments
0.0004 (mg/l) (hydrogen peroxide)	0.0004 mg/L (hydrogen peroxide)	Not applicable	Not applicable	No risk	No risk	No risk	No risk
Exposure estimate in terrestrial compartment							
No exposure of the soil compartment to sodium percarbonate resulting from the industrial and professional use of the substance is expected and exposure concentrations need not be estimated.							
PEC in soil (mg/kg d.w)		PNEC(soil) mg/kg dw				RCR in soil	

Not applicable		Not applicable		No risk	
Exposure estimate in atmospheric compartment					
Not applicable. There will be negligible release of the substance into the atmosphere due to its inorganic nature					
PEC		PNEC		RCR	
Not applicable		Not applicable		No risk	
Exposure estimate relevant for the food chain (secondary poisoning)					
No exposure of humans via the environment is anticipated					
Information for contributing scenario(2)					
The exposure estimation tool ECETOC TRA was used for the assessment of exposure.					
The risk characterisation ratio (RCR) is the quotient of the refined exposure estimate and the respective DNEL (derived no-effect level), and has to be below 1 to demonstrate a safe use.					
DNEL Inhalative = 5 mg/m3.					
DNEL Dermal = 12.8 mg/cm2					
Process category	Inhalative exposure estimate (mg/m3)	dermal exposure estimate(mg/kg bw/day)	RCR - inhalation	RCR-dermal	RCR - Total
2	0.01	0.2	No risk	No risk	No risk
4	0.5	1	No risk	No risk	No risk
8a	0.5	1	No risk	No risk	No risk
8b	0.1	1	No risk	No risk	No risk
9	0.1	1	No risk	No risk	No risk
15		0.1	No risk	No risk	No risk
19	0.1	5	No risk	No risk	No risk
8a	0.5	1	No risk	No risk	No risk
8b	0.5	1	No risk	No risk	No risk
9	0.5	1	No risk	No risk	No risk
19	0.5	5	No risk	No risk	No risk
10	1.24	2	No risk	No risk	No risk
11	1.35	5	No risk	No risk	No risk
13	1.34	2	No risk	No risk	No risk
19	1.24	5	No risk	No risk	No risk
4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES					
The DU works inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below: Inhalative DNEL= 5 mg/m3. Dermal DNEL= 12.8 mg/cm2					
If measured data are not available, the DU may make use of an appropriate scaling tool such as ECETOC TRA www.ecetoc.org to estimate the associated exposure.					
Important note: According to R.14 guidance, acute exposure levels can be derived by multiplying long-term exposure estimates by a factor of 2. The DNEL given above is for long term effects, a DNEL for acute effects is also available. By demonstrating a safe use when comparing exposure estimates with the long-term DNEL, the acute DNEL is therefore also covered.					

Exposure Scenario Format (2) addressing uses *carried out by consumer*

4 Exposure scenario (4)	
Private use of cleaning products and other mixtures containing sodium percarbonate	
use descriptors related to the life cycle stage	SU21;
Name of contributing environmental scenario (1) and corresponding ERC	Wide dispersive indoor use of processing aids in open systems (ERC8a); Wide dispersive indoor use of reactive substances in open systems (ERC8b);
List of names of contributing consumer scenarios (2-n) and corresponding PC and sub-product- categories, as applicable	PC 8 (Biocidal products [e.g. disinfectants, pest control]) PC 35 (Washing and cleaning products) PC 36 (Water softener) PC 37 (Water treatment chemicals) PC 39 (Cosmetics, personal care products)
Further explanations (if needed)	Not applicable
2.1 Contributing scenario (1) controlling environmental exposure	
Name of contributing scenario	
Further specification	
Product characteristics	
Product related conditions, e.g. the concentration of the substance in a mixture; viscosity of product; package design affecting exposure	Solid Formulated mixtures may contain up to 25% sodium percarbonate; some bleaching products may contain higher amounts of sodium percarbonate.
Amounts used	
Annual amount supplied into the consumer use(s) covered in this exposure scenario	Laundry detergents: 290 g/event Bleaches: 70 g/event
Frequency and duration of use	
Usually continuous use/release (365 days) to be assumed, unless there are significant seasonal variations.	Emission days: 360 days/year
Environment factors not influenced by risk management	
Flow rate of receiving surface water (m ³ /d, usually 18,000m ³ /d for the standard town by default; please note: the default flow rate will be rarely changeable for downstream uses.	Flow rate of receiving surface water: 18,000 m ³ /d
Other given operational conditions affecting environmental exposure	
Other operational conditions, e.g. indoor or outdoor use of products	The release fraction for wastewater is 100%. Wastewater generated during identified use is sent to an on-site or municipal wastewater treatment plant. A wastewater flow of 2000 m ³ /day and a dilution by a factor of 10 is taken into account in the generic calculation of PECs.
Conditions and measures related to municipal sewage treatment plant	
Size of municipal sewage system/treatment plant (m ³ /d) (usually 2000 m ³ /d by default for the standard town); specify degradation effectiveness; sludge treatment technique (disposal or recovery); measures to limit air emissions from sewage treatment (if applicable;) please note: the default size of the municipal STP	Not applicable.

will be rarely changeable for downstream uses.	
Conditions and measures related to external treatment of waste for disposal	
Fraction of used amount transferred to external waste treatment for disposal: type of suitable treatment for waste generated by consumer uses, e.g. municipal waste incineration, hazardous waste incineration: specify efficacy of treatment; provide corresponding instructions regarding separation of waste to be communicated to consumers;	Contaminated packaging material is disposed of properly. Wastewater is treated in chemical/biological municipal wastewater treatment plants.
Conditions and measures related to external recovery of waste	
Fraction of used amount transferred to external waste treatment for recovery: Specify type of suitable recovery operations for waste generated by consumer uses, e.g. refinery process for lubricant waste; specify efficacy of measure; provide corresponding instructions regarding separation of waste to be communicated to consumers.	Not applicable.
2.2 Contributing scenario (2) controlling consumer exposure for...	
All Product Categories are covered by this contributing scenario as all Operational Conditions (OCs) and Risk Management Measures (RMMs) are identical. PC8/35/36/37/39;	
Product characteristic	
Product related conditions, e.g. the concentration of the substance in a mixture, the physical state of that mixture (solid, liquid; if solid: level of dustiness), package design affecting exposure	Solid Formulated mixtures may contain up to 25% sodium percarbonate; some bleaching products may contain higher amounts of sodium percarbonate.
Amounts used	
Amounts used per event	Laundry detergents: 290 g/event Bleaches: 70 g/event
Frequency and duration of use/exposure	
Duration of exposure per event and frequency of events; please note: Tier 1 exposure assessment usually refers to external event exposure, without taking into account the duration and frequency of the event (see Guidance Chapter R.15);	Laundry detergents: 3 times a day Bleaches: once a day Laundry detergents: 1 minute transfer, 20 minutes use phase Bleaches: 10 minutes use phase
Human factors not influenced by risk management	
Particular conditions of use, e.g. body parts potentially exposed; population potentially exposed (adults, children) ;	Exposure is considered for a consumer having a body weight of 60 kg. The skin surface area that can be in contact with the product is that of the palms of two hands (480 cm ²). The skin surface area that can be in contact with the product solutions is that of both hands and the forearms (1980 cm ²).
Other given operational conditions affecting consumer exposure	
Other operational conditions e.g. room volume, air exchange rate, outdoor or indoor use;	indoors
Conditions and measures related to information and behavioural advice to consumers	
Safety advice to be communicated to consumers in order to control exposure, e.g. technical instruction, behavioural advice; please note: usually such measures are not expected to be effective, unless the registrant has available particular evidence that consumers follow the advice. These measures may however be included under the "Good Practice Advice", and thus the effectiveness of the instructions/advice would not be taken into account when deriving exposure estimates and risk	Keep out of the reach of children.

characterisation in the CSR.							
Conditions and measures related to personal protection and hygiene							
Usually personal protection measures are not expected for consumer products; however if e.g. gloves are recommend this can be specified here; specify the suitable material for the PPE (where relevant,) and advise how long the protective equipment can be used before replacement (if relevant);please note: usually such measures are not expected to be effective if applied by consumers. Thus, is recommended to include these measures under the “Good Practice Advice”, rather than taking the use of PPE into account when deriving exposure estimates and risk characterisation in the CSR.				1. Eye protection: The use of eye protection is recommended to avoid contact of the eyes with the undiluted product. 2. Hygiene measures: Keep away from foodstuffs, drinks and tobacco. Wash hands thoroughly after open handling of the product.			
3 Exposure information and relevance to its source							
Information for contributing scenario(1)							
ERC8a, Wide dispersive indoor use of processing aids in open systems; ERC8b, Wide dispersive indoor use of reactive substances in open systems;							
Environmental emissions							
Nearly 100 % of the amount of sodium percarbonate contained in the household cleaning products used by consumers will be released to the sewer system as an aqueous solution after use. The losses of product (e.g. as dust during transfer or residual product in the packages) are considered as negligible for the present assessment of the environmental exposure. The assessment of potential environmental risks is based on hydrogen peroxide which is the adverse agent released by the dissociation of sodium percarbonate in water. The generic environmental exposure scenario (50 tonnes/year, 365 release days, 100% release to wastewater, onsite treatment in biological WWTP with 2,000 m³/day capacity, dilution capacity of 10) results in PECs given below:							
Exposure estimate in sewage treatment plants (STP)							
PEC in sewage (mg/l)		PNEC in sewage (mg/l)		RCR in sewage			
0.004 mg/L (hydrogen peroxide)		4.66 mg/L (hydrogen peroxide)		No risk			
Exposure estimate in aquatic compartment							
PNEC in freshwater= 0.01 mg/l (hydrogen peroxide) PNEC in marine water: 0.01 mg/l (hydrogen peroxide) PNEC in freshwater sediments= not applicable PNEC in marine water sediments: not applicable Note: No exposure of the sediment compartment is expected and a prediction of exposure concentrations is not necessary							
PEC in freshwater(mg/l)	PEC in marine water (mg/kg d.w.)	PEC in freshwater sediments (mg/kg d.w)	PEC in marine water sediments (mg/kg d.w)	RCR in freshwater	RCR in marine water	RCR in freshwater sediments	RCR in freshwater sediments
0.0004	0.0004	Not applicable	Not applicable	No risk	No risk	No risk	No risk
Exposure estimate in terrestrial compartment							
No exposure of the soil compartment to sodium percarbonate resulting from the private use of washing and cleaning products and other mixtures containing the substance is expected and exposure concentrations need not be estimated.							
PEC in soil (mg/kg d.w)		PNEC(soil) mg/kg dw			RCR in soil		
Not applicable		Not applicable			No risk		
Exposure estimate in atmospheric compartment							
The atmospheric emissions of sodium percarbonate from the private use of washing and cleaning powders and other mixtures containing the substance are negligible.							

PEC	PNEC	RCR
Not applicable	Not applicable	No risk

Exposure estimate relevant for the food chain (secondary poisoning)

Sodium percarbonate will rapidly dissociate in water or in contact with sediment or soil. The substance does not bio-accumulate. Sodium carbonate and hydrogen peroxide are highly water-soluble and will remain in the water phase. They do not accumulate in the food webs. Thus, a secondary poisoning does not occur.

Information for contributing scenario(2)

The exposure estimation tool ECETOC TRA was used for the assessment of exposure.

The risk characterisation ratio (RCR) is the quotient of the refined exposure estimate and the respective DNEL (derived no-effect level), and has to be below 1 to demonstrate a safe use.

DNEL Dermal = 6.4 mg/cm²

Product category	dermal exposure estimate(mg/cm ²)	RCR-dermal
Transfer laundry detergent	0.19	No risk
Transfer bleach	0.75	No risk
Manual washing	0.08	No risk

4 Guidance to DU to evaluate whether he works inside the boundaries set by the ES

The DU consumer inside the boundaries set by the ES if either the proposed risk management measures as described above are met or the downstream user can demonstrate on his own that his operational conditions and implemented risk management measures are adequate. This has to be done by showing that they limit the inhalation and dermal exposure to a level below the respective DNEL (given that the processes and activities in question are covered by the PROCs listed above) as given below:

DNEL Dermal = 6.4 mg/cm²If measured data are not available, the DU may make use of an appropriate scaling tool such as **ECETOC TRA** www.ecetoc.org to estimate the associated exposure.

Important note: According to R.14 guidance, acute exposure levels can be derived by multiplying long-term exposure estimates by a factor of 2. The DNEL given above is for long term effects, a DNEL for acute effects is also available. By demonstrating a safe use when comparing exposure estimates with the long-term DNEL, the acute DNEL is therefore also covered.