



**Join Stock Company**  
**«Percarbonat»**

## ***SAFETY DATA SHEET***

# **SODIUM PERCARBONATE TECHNICAL ENCAPSULATED**

In accordance to Regulation (EC) No 1907/2006 (as amended by Commission Regulation (EU) No 453/2010)

Date: 19/11/2015; version 1.0

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

#### **1.1. Product identifier**

Substance name: Sodium Percarbonate technical encapsulated

EC Name: Sodium percarbonate

Index No: -  
(Annex VI to Regulation  
(EC) No 1272/2008)

EC No: 239-707-6

CAS No: 15630-89-4

Registration No: 01-2119457268-30-0016

(assigned under Article  
20(3) of Regulation (EC)  
No 1907/2006)

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

Identified uses:

- Manufacture of sodium percarbonate;
- Formulation of mixture containing sodium percarbonate;
- Industrial and professional use of cleaning products and other mixtures containing sodium percarbonate;
- Private use of cleaning products and other mixtures containing sodium percarbonate.

Uses advised against: Uses other than those given above, are not recommended.

Exposure scenario(s): For detailed information on exposure assessment, please, refer Annex I to this eSDS.

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

Company	Contact	Address: JSC PERCARBONAT
Details:		101 "D", Promyshlennaya str., Novocheboksarsk Chuvash Republic 429952, Russia Tel.: +7 8352 73 59 32, +7 8352 74 00 53, +7 8352 74 58 85, +7 8352 74 14 55 Fax. +7 8352 74-58-85 percarbonat@percarnonat.ru Glotova@percarnonat.ru
Only	Representative	Address: Tekniikantie 21, 02150 Espoo, Finland
Contact Details:		Tel: +358 923 164 353 Fax: +358 9 8565 7173 E-mail: hs@reach-registrator.net

### 1.4. Emergency telephone number

Company/Importer/OR	+7 8352 74 58 85
Emergency number:	+7 8352 74 14 55

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according *for physical-chemical properties:*

to the criteria of	• Oxid. Solid 2 (Hazard statement: H272: May intensify fire; oxidiser.) (uncoated substance)
Regulation (EC) No 1272/2008 (CLP Regulation):	
	• Oxid. Solid 3 (Hazard statement: H272: May intensify fire; oxidiser.) (coated substance).

*for health hazards:*

- Acute Tox. 4 (Hazard statement: H302: Harmful if swallowed.);
- Eye Damage 1 (Hazard statement: H318: Causes serious

eye damage.);

*for environmental hazards:*

- Not classified.

## 2.2. Label elements

Labelling according to Signal word: Danger

the GHS criteria of

Regulation (EC) No Hazard pictograms:

1272/2008

(CLP

Regulation):

GHS03: flame over circle Signal word: Warning



GHS05: corrosion Signal word: Warning



GHS07: exclamation mark Signal word: Danger



Hazard statements:

H272 – May intensify fire; oxidizer.

H302 – Harmful if swallowed.

H318 – Causes severe eye damage.

Precautionary statements:

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P220: Keep/Store away from clothing/flammable/combustible materials.

P280: Wear protective gloves/protective clothing/eye 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.

P370+378: In case of fire: Use water for extinction.

P401: Store in a dry place at temperatures not exceeding 35 °C

**Proposed specific concentration limits:**

$C \geq 25 \%$  : Eye damage 1; H318

$7.5 \leq C < 25 \%$  : Eye irrit. 2; H319

### 2.3. Other hazards

Human Health Hazards: Skin contact causes slight irritation. Eyes contact cases distinct irritation.  
Harmful at inhalation of dust, aerosol and if swallowed.

PBT assessment: The substance is not PBT / vPvB

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Main constituent(s):

CAS No	Chemical name	% (mass)	EC No
15630-89-4	disodium carbonate, compound with hydrogen peroxide (2:3)	84.4 – 89.6	239-707-6

Stabilizer(s):

CAS No	Chemical name	% (mass)	EC No
-	-	-	-

Other Hazardous Components/ Impurities:

CAS No	Chemical name	% (mass)	EC No
497-19-8	sodium carbonate	Max. 5.9	207-838-8
7757-82-6	sodium sulphate	Max. 7.0	231-820-9
1344-09-8	Silicic acid, sodium salt	Max. 1.9	215-687-4
7647-14-5	sodium chloride	Max. 0.5	231-598-3

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- Inhalation:
- Remove the subject from dusty environment and let him blow his nose. Keep the affected person warm and at rest.
  - If symptoms persist, call a physician.
- Eye contact:
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
  - In the case of difficulty of opening the lids, administer an analgesic eye wash (oxybuprocaine).
  - Consult with an ophthalmologist immediately in all cases.
- Skin contact:
- Remove and wash contaminated clothing before re-use.
  - Wash off with plenty of water.
  - If symptoms persist, call a physician.
- Ingestion:
- Call a physician immediately.
- If victim is conscious:
- If swallowed, rinse mouth with water (only if the person is conscious).
  - Do NOT induce vomiting.
- If victim is unconscious but breathing:
- Artificial respiration and/or oxygen may be necessary.
- Means of first aid:
- Activated carbon, saline purge

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

- Inhalation:**
- Languor, running eyes, coryza, cough, tickling in throat, breathing disorder.
- Skin contact:**
- Irritation (slight erythema and oedema).
- Eyes contact:**
- Distinct irritation of mucous membrane (profuse lacrimation, blepharospasm). Causes severe eye damage.
- Ingestion:**
- Nausea, vomiting, diarrhea. Harmful if swallowed, can lead to death.

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

- Immediate medical attention:
- In case of ingestion call a physician immediately.

### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

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

media: circumstances and the surrounding environment.

- Water
- Water spray

Extinguishing media

- None

which shall not be used

for safety reasons

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

Special exposure

- Oxidising
- Oxygen released in thermal decomposition may support combustion
- Contact with combustible material may cause fire.
- Contact with flammables may cause fire or explosions.
- Risk of explosion if heated under confinement.

hazards in a fire:

## 5.3. Advice for firefighters

Special protective

- In the event of fire, wear self-contained breathing apparatus.
- Fire fighters must wear fire resistant personnel protective equipment.

equipment for fire-fighters:

Other information:

- Keep product and empty container away from heat and sources of ignition.

## SECTION 6: Accidental release measures

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

Personal precautions

- Refer to protective measures listed in sections Handling and storage.
- Keep away from incompatible products

### 6.2. Environmental precautions

Accidental Spills and

- Limited quantity can be flushed into sewer with plenty of water.

Releases:

- If the product contaminates rivers and lakes or drains inform respective authorities.

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

If spilled, the following

- Do not add chemical products.

- steps should be undertaken:
- Pick up and arrange disposal without creating dust.
  - All receiving equipment should be clean, vented, dry, labelled and made of material that is compatible with the product.
  - Treat recovered material as described in the section "Disposal considerations".

#### 6.4. Reference to other sections

- Reference to other sections:
- See Section 7 for information on safe handling.
  - See section 8 for information on personal protection equipment.
  - See Section 13 for information on disposal.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Handling:
- Clean and dry piping circuits and equipment before any operations.
  - Never return unused material to storage receptacle.
  - Containers and equipment used to handle the product should be used exclusively for that product.
  - Keep away from heat and sources of ignition.
  - Keep away from Incompatible products.

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

- Storage:
- Keep in a dry place.
  - Keep in a cool, well-ventilated place.
  - Keep away from direct sunlight.
  - Keep away from heat.
  - Keep away from Incompatible products.
  - The container must be used exclusively for the product.
  - Keep in container fitted with safety valve or vent.
- Packaging material:
- Stainless steel
  - Polyethylene
  - Paper + PE coating.
  - glass
- Other information:
- Avoid dust formation.
  - Refer to protective measures.

- In industrial installations, apply the rules for the prevention of major accidents (consult an expert).
- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- To avoid thermal decomposition, do not overheat.

### 7.3. Specific end use(s)

Please refer to Annex 1 (Exposure scenarios).

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

DNELs for workers

Exposure pattern	Route	DNEL (appropriate unit)	Most sensitive endpoint
Acute - systemic effects	Dermal (mg/kg bw /day)	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA
Acute - local effects	Dermal (mg/cm <sup>2</sup> )	12.8 mg/cm <sup>2</sup>	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA
Long-term - systemic effects	Dermal (mg/kg bw /day)	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA
Long-term - local effects	Dermal (mg/cm <sup>2</sup> )	NA	NA
	Inhalation (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>	Respiratory irritation

NA: not applicable

DNELs for consumers

Exposure pattern	Route	DNEL (appropriate unit)	Most sensitive endpoint
Acute - systemic effects	Dermal (mg/kg bw /day)	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA
Acute - local effects	Dermal (mg/cm <sup>2</sup> )	6.4 mg/cm <sup>2</sup>	NA



	Inhalation (mg/m <sup>3</sup> )	NA	NA
Long-term - systemic effects	Dermal (mg/kg bw /day)	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA
Long-term - local effects	Dermal (mg/cm <sup>2</sup> )	NA	NA
	Inhalation (mg/m <sup>3</sup> )	NA	NA

NA: not applicable

PNECs from the CSR in accordance with  $PNEC_{aquatic}(\text{sodium percarbonate}) = 10/0.287 \text{ g/L} = 35 \text{ g/L}$   
 $PNEC_{STP} = 4.66/0.287 \text{ mg/L} = 16 \text{ mg/L}$

REACH regulation: (Note: These values are not legally binding and are referred here for recommendation purpose only. All currently adopted by the national/regional competent authority levels on safe exposure to this chemical shall apply):

## 8.2. Exposure controls

- Exposure controls
- Ensure adequate ventilation.
  - Refer to protective measures.
  - Apply technical measures to comply with the occupational exposure limits.

- Individual protection measures
- Respiratory protection**
- Use only respiratory protection that conforms to international/national standards.
  - Recommended Filter type:
  - P2

### Hand protection

- Wear suitable gloves.
- Suitable material : PVC, Neoprene, Natural Rubber

**Eye protection:** Chemical resistant goggles must be worn.

**Skin and body protection:** Protective suit

### Hygiene measures

- Use only in an area equipped with a safety shower.
- Eye wash bottle with pure water
- Handle in accordance with good industrial hygiene and safety practice for diagnostics.

Environmental exposure controls                      Dispose of rinse water in accordance with local and national regulations.

Please refer to Annex I of this eSDS for appropriate engineering controls, individual protection measures and environmental exposure controls of each exposure scenario.

## SECTION 9: Physical and chemical properties

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

Appearance:	Solid, white granules. Color: white
Odour:	Without odour.
Odour threshold:	Not known.
pH:	9,5 - 9,7
Melting point/freezing point:	140 °C with decomposition
Initial boiling point and boiling range:	Not applicable. Decomposes when heated.
Flash point:	Not applicable. Sodium percarbonate is an inorganic salt.
Evaporation rate:	Not known.
Flammability:	Not flammable
Upper/lower flammability or explosive limits:	Not applicable.
Vapour pressure:	Not known.
Vapour density:	Not applicable. Sodium percarbonate is a solid inorganic salt.
Relative density:	2.01 to 2.16
Solubility(ies):	140 g/L Water at 20 °C: 147000 mg/l Water at 30 °C: 175000 mg/l
Partition coefficient: n-octanol/water:	Not applicable. Sodium percarbonate is an inorganic salt.
Auto-ignition temperature:	Not applicable. Decomposes when heated.
Decomposition temperature:	140 °C

Viscosity	Not applicable. Sodium percarbonate is a solid inorganic salt.
Explosive properties:	Not explosive.
Oxidising properties:	Oxidising solid of class 5.1 (UN Recommendations) Packaging Group III (coated substance) Packaging Group II (uncoated substance)

## 9.2. Other information

Solubility in fats:	insoluble
Reactivity towards container material:	Not corrosive
Thermal stability:	Thermally stable under conditions of storage and transport

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Chemical dangers:	<ul style="list-style-type: none"><li>• Reduces, reacts with acids and alkalis.</li></ul>
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### 10.2. Chemical stability

Stability/ Shelf-life:	<ul style="list-style-type: none"><li>• - Potential for exothermic hazard</li><li>• - Stable under recommended storage conditions.</li></ul>
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### 10.3. Possibility of hazardous reactions

Special precautions:	<ul style="list-style-type: none"><li>• Under prescribed conditions of handling and storage no hazardous reactions will occur.</li></ul>
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### 10.4. Conditions to avoid

Conditions contributing to instability:	<ul style="list-style-type: none"><li>• Exposure to moisture.</li><li>• To avoid thermal decomposition, do not overheat.,</li><li>• Direct sunrays.</li></ul>
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### 10.5. Incompatible materials

Materials to avoid:	<ul style="list-style-type: none"><li>• Water, Acids, Bases, Heavy metal salts, Reducing agents, Organic materials, Flammable materials, Combustible material</li></ul>
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## 10.6. Hazardous decomposition products

Hazardous decomposition products:

- Oxygen.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity: acute oral LD<sub>50</sub> ( rats) 1034 mg/kg body weight (Glaza 1990a) - causes local effects in the gastrointestinal tract and can lead to death.

acute dermal LD<sub>50</sub> >2000 mg/kg body weight (Glaza 1990b), 14 days. Animals in the dermal toxicity test on sodium percarbonate were exposed under occlusion for 24 hours and under these conditions the substance caused severe skin irritation and possibly corrosive effects.

Inhaled sodium percarbonate will dissociate into hydrogen peroxide and sodium carbonate in the respiratory tract.

acute inhalation LD<sub>50</sub> value for hydrogen peroxide in the rat >170 mg/m<sup>3</sup> based on the maximal attainable vapour concentration of 49.3 % hydrogen peroxide

LD<sub>50</sub> value for sodium carbonate = 1200 mg/m<sup>3</sup> in mice and 2300 mg/m<sup>3</sup> in rats (European Commission 2003, OECD 2002).

Hydrogen peroxide and sodium carbonate cause local irritation effects in the respiratory tract.

Skin corrosion/irritation: Not irritating

Serious eye damage/irritation: Irritating. Mixtures containing 25 % sodium percarbonate or more can cause serious damage to eyes. Mixtures containing 10 % sodium percarbonate or more but less than 25 % have to be considered as irritating to eyes. The substance is classified as eye irritant Category 1 according to the CLP Regulation (EC) No 1272/2008

Respiratory irritation: Not irritating. The test material caused respiratory irritation in test animals with an RD<sub>50</sub> of approximately 700 mg/m<sup>3</sup>, which does not warrant classification in accordance with the CLP Regulation (EC) No 1272/2008.

Respiratory or skin Skin sensitisation:

sensitization:	not sensitising <u>Respiratory sensitisation:</u> The sensitising effects of sodium percarbonate in the respiratory system have not been tested.
Germ cell mutagenicity:	Unlikely to have any in vivo genotoxic potential.
Carcinogenicity	The only component that could give rise to some concerns with regard to this endpoint is hydrogen peroxide. The weight of evidence at this time does not suggest that the carcinogenic properties of hydrogen peroxide should be regarded as practically significant.
Reproductive toxicity:	From the nature of the substance it is to be anticipated that neither sodium percarbonate nor hydrogen peroxide and sodium carbonate will be systemically available under human exposure conditions and are thus unlikely to reach the gonads and the developing embryo or foetus. Therefore the substance is unlikely to have any relevant potential for toxicity to reproduction or developmental toxicity and no further animal testing is warranted for those endpoints.
STOT-single & repeated exposure:	No other toxicological effects of sodium percarbonate are expected because the substance has only local effects.
Aspiration:	Not classified.

## SECTION 12: Ecological information

### 12.1. Toxicity

Aquatic environment: The substance is not classified as to the effects on the environment.

Short-term toxicity to freshwater fish (*Pimephales promelas*): The 96-hour LC<sub>50</sub> based on mortality was calculated to be 70.7 mg/L (with a 95% confidence interval of 49.9 to 100.2 mg/L).

Long-term toxicity to fish: Long-term exposure of fish to sodium percarbonate is not expected.

Short-term toxicity to freshwater invertebrates (*Daphnia pulex*): EC<sub>50</sub> (mortality) was determined based on the titrimetrically determined concentration to be 4.9 mg/L and the NOEC to be 2 mg/L.

Long-term toxicity to aquatic invertebrates: Long-term exposure of aquatic invertebrates to sodium percarbonate is not expected.

An algal study with *Chlorella vulgaris* has been conducted with hydrogen peroxide under standard test conditions (Degussa, 1991). The EC<sub>50</sub> and NOEC of this study were 2.5 and 0.1 mg/L, respectively. Based on the study of Degussa (1991) predicted EC<sub>50</sub> and NOEC values for a study with *C. vulgaris* and sodium percarbonate are 7.7 and 0.3 mg/L, respectively. Although a standard and valid guideline study is not available for algae, the toxicity of sodium percarbonate for algae can be predicted from an algal test with hydrogen peroxide.

The toxicity of sodium percarbonate to sediment organisms has not been studied. Sodium percarbonate rapidly dissolves in water and dissociates into sodium ions, carbonate ions and hydrogen peroxide. Sodium carbonate and hydrogen peroxide are very water soluble and will therefore remain in the water phase. Hydrogen peroxide adsorbs poorly to sediment particles and is rapidly degraded, thus accumulation in the sediment is not expected (European Commission 2003).

No tests on the environmental hazards of sodium percarbonate for other aquatic organisms are available.

Toxicity tests, which determine the effects of sodium percarbonate on soil macro-organisms, terrestrial plants, soil microorganisms, terrestrial organisms are not available. No exposure of the terrestrial environment is expected and for this reason there is no need to perform toxicity test with soil macro-organisms, terrestrial plants, soil microorganisms or terrestrial organisms.

Toxicity tests, which determine the effects of sodium percarbonate on birds, additional mammals are not available. No exposure of the terrestrial environment and no bioconcentration of sodium percarbonate in the food webs are expected and for this reason there is no need to perform toxicity test with birds or additional mammals.

## **12.2. Persistence and degradability**

**Hydrolysis:** Sodium percarbonate rapidly dissolves in water and dissociates into hydrogen peroxide and sodium carbonate. Hydrogen peroxide is a reactive substance in the presence of other substances, elements, radiation, materials and cells. Both biotic and abiotic degradation processes are important routes in removal of hydrogen peroxide in the environment. The half-life of hydrogen peroxide in surface water can be less than one day but in some cases it can be up to five days (European Commission 2003). The carbonate ions released to water will react with water, resulting in the formation of bicarbonate and hydroxide, until equilibrium is established. An emission of sodium carbonate to water will result in an increase in alkalinity. The increase in pH will depend on the buffer capacity of water,

which in most cases is determined by the natural concentration of bicarbonate. The bicarbonate will equilibrate with dissolved carbon dioxide in the water. Thus, inorganic carbon will be present as carbon dioxide, carbonate and bicarbonate (OECD 2002).

Sodium ions released after the emission of sodium percarbonate will remain unchanged in the aquatic environment (OECD 2002).

Phototransformation/  
photolysis:

Photodegradation of sodium percarbonate is not applicable because the substance is an inorganic salt with a negligible vapour pressure (OECD 2006).

Photodegradation of sodium percarbonate in water is not applicable because the substance in water rapidly dissociates into sodium carbonate and hydrogen peroxide, which undergo further dissociation and degradation. For hydrogen peroxide no significant direct phototransformation in water is found (European Commission 2003).

There is no exposure of the terrestrial environment to sodium percarbonate from the identified uses. Sodium percarbonate dissociates into sodium carbonate and hydrogen peroxide in contact with soil; rapid degradation of hydrogen peroxide in soil will occur due to high concentrations of catalytic material such as transition metals, enzymes, organic matter and living microbes (European Commission 2003).

Biodegradation:

Sodium percarbonate dissolves in water and dissociates into sodium ions, carbonate ions and hydrogen peroxide. Hydrogen peroxide is a reactive substance in the presence of other substances, elements, radiation, materials and cells. Hydrogen peroxide is also biodegraded enzymatically. The ultimate degradation products will be the same for abiotic and biotic degradation: sodium, inorganic carbon, oxygen and water. The carbonate ions released to water will react with water, resulting in the formation of bicarbonate and hydroxide, until equilibrium is established. The bicarbonate will equilibrate with dissolved carbon dioxide in the water. Thus, inorganic carbon will be present as carbon dioxide, carbonate and bicarbonate.

### **12.3. Bioaccumulative potential**

Summary and discussion of bioaccumulation: Sodium percarbonate in water dissociates into sodium carbonate and hydrogen peroxide. Sodium carbonate in water will dissociate to sodium and carbonate. The carbonate ions will react with water, resulting in the formation of bicarbonate and hydroxide, until equilibrium is established. All ions will not accumulate in living tissue (OECD 2002). Hydrogen peroxide is a reactive and short-lived polar substance in the environment and no bioaccumulation is expected. Also its estimated negative log  $K_{OW}$  of -1.57 indicates negligible potential for bioconcentration in aquatic and/or terrestrial organisms (European Commission 2003).

No bioaccumulation of sodium percarbonate or its dissociation products sodium carbonate and hydrogen peroxide is expected.

#### **12.4. Mobility in soil**

Environmental distribution: There is no exposure of the terrestrial environment to sodium percarbonate from the identified uses. Sodium percarbonate dissociates into sodium carbonate and hydrogen peroxide in contact with soil; rapid degradation of hydrogen peroxide in soil will occur due to high concentrations of catalytic material such as transition metals, enzymes, organic matter and living microbes (European Commission 2003).

#### **12.5. Results of PBT and vPvB assessment**

Overall conclusion: Sodium percarbonate does not fulfil the PBT criteria for persistence, bioaccumulation or toxicity given in Annex XIII. It is not very persistent or very bioaccumulative.

#### **12.6. Other adverse effects**

Not known.

### **SECTION 13: Disposal considerations**

#### **13.1. Waste treatment methods**

Disposal (Waste from • Dilute with plenty of water.



- residues / unused products):
- Dispose of wastes in an approved waste disposal facility.
  - Can be landfilled, when in compliance with local regulations.
  - In accordance with local and national regulations.
- Disposal of containers (Packaging treatment):
- Clean container with water.
  - Empty containers should be taken to an approved waste handling site for recycling or disposal.
  - Uncleaned empty packaging
  - Dispose of as unused product.
  - In accordance with local and national regulations.

## SECTION 14: Transport information

### 14.1. UN number

UN No: 3378

### 14.2. UN proper shipping name

UN Proper Shipping Name: SODIUM CARBONATE PEROXYHYDRATE

### 14.3. Transport hazard class(es)

Hazard Class or Division: 5.1

### 14.4. Packing group

UN Packing Group: III

### 14.5. Environmental hazards

Environmental Hazards: The substance is not classified as to the effects on the environment.

### 14.6. Special precautions for user

Note: A number of restrictions may apply to materials subject to local/national/regional classifications requirements. Please refer to the appropriate

regulation for specific details regarding classification requirements and restrictions.

#### **14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

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### **SECTION 15: Regulatory information**

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

Export and Import of Dangerous Chemicals (Regulation (EC) No 689/2008) Information: This substance is not listed in the Annex I of Regulation (EC) No 689/2008.

CLP Regulation (EC) No 1272/2008: This substance is not listed in Annex VI (tables 3.1 and 3.2) to CLP regulation.

REACH Regulation (EC) No 1907/2006: Registration requirement (Article 5, REACH regulation):  
This substance is registered in accordance with provisions of REACH regulation. For registration number, please refer section 1.1 of this eSDS.

#### **15.2. Chemical safety assessment**

CSA: Chemical Safety Assessment has been carried out for this chemical in accordance with provisions of REACH regulation.

### **SECTION 16: Other information**

#### **Indication of changes:**

Version 1.0 dated 19/11/2015 – eSDS was compiled in accordance with the joint CSR version under REACH registration. Annex 1 contains short exposure scenarios from the CSR of the lead registrant.

**Abbreviations and acronyms:**

<b>AIHA ERPGs</b>	The American Industrial Hygiene Association (AIHA) Emergency Response Planning Guidelines (ERPGs)
<b>BAF</b>	Bio Accumulation Factor
<b>BCF</b>	Bio Concentration Factor
<b>CAS No</b>	Chemical Abstracts Service number
<b>CLP</b>	Classification Labelling Packaging Regulation ; Regulation (EC) No 1272/2008
<b>CSA</b>	Chemical Safety Assessment
<b>CSR</b>	Chemical Safety Report
<b>DMEL</b>	Derived Minimal Effect Level
<b>DNEL</b>	Derived No Effect Level
<b>DPD</b>	Dangerous Preparation Directive 1999/45/EEC
<b>DSD</b>	Dangerous Substances Directive 67/548/EEC
<b>EC</b>	European Commission
<b>EC50</b>	Half maximal effective concentration
<b>ECHA</b>	European Chemicals Agency
<b>EC-Number</b>	EINECS and ELINCS Number (see also EINECS and ELINCS)
<b>EINECS</b>	European Inventory of Existing Commercial Substances
<b>ELINCS</b>	European List of notified Chemical Substances
<b>ES</b>	Exposure Scenario
<b>e-SDS</b>	Extended Safety Data Sheet (SDS with ES attached)
<b>EU</b>	European Union
<b>GHS</b>	Globally Harmonized System
<b>IUPAC</b>	International Union for Pure Applied Chemistry
<b>LC50</b>	Lethal concentration, 50 %
<b>LD50</b>	Median Lethal Dose
<b>OEL</b>	Occupational Exposure Limit
<b>OSHA PEL</b>	Occupational Safety and Health Administration Permissible Exposure Level
<b>PBT</b>	Persistent, Bioaccumulative and Toxic substance
<b>PNEC(s)</b>	Predicted No Effect Concentration(s)
<b>PPE</b>	Personal Protection Equipment
<b>(Q)SAR</b>	Qualitative Structure Activity Relationship
<b>REACH</b>	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
<b>RMM</b>	Risk Management Measure
<b>STOT</b>	Specific Target Organ Toxicity
<b>(STOT) RE</b>	Repeated Exposure
<b>(STOT) SE</b>	Single Exposure

<b>TLV</b>	Threshold limit value
<b>TWA</b>	Time-Weighted Average
<b>UN</b>	United Nations
<b>vPvB</b>	Very Persistent and Very Bioaccumulative

**Key Literature References and Sources for data:**

Chemical safety report (dated 2013-07-12) prepared by the lead registrant of the joint submission.  
Guidance on safe use for prepared by the lead registrant of the joint submission.

**Disclaimer:**

*The information contained herein is accurate and is based on the present state of our knowledge. Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s). All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.*

**Annex 1: Exposure Scenarios**

## Summarised exposure scenarios for sodium percarbonate

### Summary of exposure scenario 1: Manufacture of sodium percarbonate

1. Short title of exposure scenario 1	
Manufacture of sodium percarbonate	
2. Description of activities and processes covered in the exposure scenario 1	
Sector of use (SU)	SU 8 (Manufacture of bulk, large scale chemicals)
Product category (PC)	Not applicable
Process category (PROC )	PROC 1 (Use in closed, continuous process, no likelihood of exposure) PROC 2 (Use in closed, continuous process with occasional controlled exposure) PROC 4 (Use in batch and other process [synthesis] where opportunity for exposure arises) PROC 8b (Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities) PROC 9 (Transfer of substance or preparation into small containers (dedicated filling line, including weighing))
Article category (AC)	Not applicable
Environmental release category (ERC)	ERC 1 (Manufacture of substances)
3. Operational conditions	
3.1 Duration and frequency of use for which the exposure scenario ensures control of risk	
Duration of exposure at workplace:	8 hours/day
Frequency of exposure at workplace:	220 days/year for each worker (EC, 2008b, p. 8)
Annual amount used per site:	< 50,000 tonnes/year
Emission days per site:	330 to 360 days/year
4.1 Physical form of product in which the substance is contained	
Solid	
4.2 Concentration of substance in preparation or article	
Not applicable	
4.3 Amount used per time or per activity for which the risk management measures (RMMs), in combination with	

other operational conditions of use ensure control of risk	
RMM and other operational conditions of use ensure control of risk at any given time and for any given throughput during the manufacture of sodium percarbonate.	
5. Other operational conditions determining exposure, e.g. temperature, capacity of receiving environment (water flow; room size x ventilation rate), emission or release factors to the relevant compartments	
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.	
6. RMMs that, in combination with the operational conditions of use, ensure control of risk related to the different target groups	
6.1 RMMs related to workers	
Technical measures	Local exhaust ventilation with an efficiency of 90% is required for manufacturing stages where solid substance is handled.
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.
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.
Hand protection	Wearing of permeation resistant gloves with suitable materials for safety gloves is required. Suitable materials are PVC, Neoprene, Natural rubber
Eye protection	Wearing of eye/face protection is required. Chemical goggles should be consistent with EN 166 or equivalent.
Skin and body protection	Wearing of suitable protective clothing is required.
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.
6.2 Environment related measures; type and efficiency of single options or combination of options on exposure to be quantified; options to be phrased as instructive guidance	
Organisational measures	Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures.
Abatement measures wastewater	Wastewater is treated in chemical/biological on-site or municipal wastewater treatment plants.
Abatement measures waste air	Waste air has to be cleaned by passing through dust filters or wet scrubbers.

Soil	All relevant soil surfaces in the facility have to be covered to avoid drainage of substance into soil.
7. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
Type of waste	Solid waste (e.g. dust filters).
Disposal technique	Contaminated packaging material is decontaminated and deposited or incinerated. Solid waste substance is transferred into wastewater.
Fraction released to environment during waste treatment	The conditions of release of substance to wastewater at the manufacturing site have to be such that the PNEC STP of 16 mg/L (corresponding to 4.66 mg/L hydrogen peroxide – the active adverse agent) and the PNEC aquatic for freshwater and seawater of 0.035 mg/L (corresponding to a hydrogen peroxide concentration of 0.01 mg/L) are respected.
8. Prediction of exposure resulting from the conditions described above (entries 3 - 6) and the substance properties. Data are given as measured data or as generated with ECETOC TRA.	
Workers (oral)	No significant oral exposure due to good hygiene practice.
Workers (dermal)	Calculated with ECETOC TRA
PROC 1	0.34 mg/kg bw day, 0.1 mg/cm <sup>2</sup>
PROC 2	1.37 mg/kg bw day, 0.2 mg/cm <sup>2</sup>
PROC 4	6.86 mg/kg bw day, 1 mg/cm <sup>2</sup>
PROC 8b	6.86 mg/kg bw day, 1 mg/cm <sup>2</sup>
PROC 9	6.86 mg/kg bw day, 1 mg/cm <sup>2</sup>
Workers (inhalation)	Calculated with ECETOC TRA
PROC 1	0.01 mg/m <sup>3</sup>
PROC 2	0.01 mg/m <sup>3</sup>
PROC 4	0.5 mg/m <sup>3</sup>
PROC 8b	0.1 mg/m <sup>3</sup>
PROC 9	0.1 mg/m <sup>3</sup>
Consumer	Not applicable
Environment	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 calculated PECs of hydrogen peroxide representing the conditions at the manufacturing sites in the EU did not exceed the values given below.
Air	Not applicable
Freshwater	<0.001 mg/L (hydrogen peroxide)

Seawater	<0.001 mg/L (hydrogen peroxide)
Freshwater sediment	Not applicable
Marine sediment	Not applicable
Soil	Not applicable
STP	<0.013 mg/L (hydrogen peroxide)
Humans via the environment	Not applicable

### **Summary of exposure scenario 2: Formulation of mixture containing sodium percarbonate**

1. Short title of exposure scenario 2	
Formulation of mixtures containing sodium percarbonate	
2. Description of activities and processes covered in the exposure scenario 2	
Sector of use (SU)	SU 3 (Industrial uses) SU 10 (Formulation [mixing] of preparations and/or repackaging [excluding alloys])
Product category (PC)	PC 8, 14, 15, 20, 25, 34, 35, 36, 37, 39
Process category (PROC )	PROC 1 (Use in closed, continuous process, no likelihood of exposure) PROC 2 (Use in closed, continuous process with occasional controlled exposure) PROC 3 (Use in closed batch process [synthesis or formulation]) PROC 4 (Use in batch and other process [synthesis] where opportunity for exposure arises) PROC 5 (Mixing or blending in batch process for formulation of preparations and articles[multistage and/or significant contact]) PROC 8a (Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at non-dedicated facilities) PROC 8b (Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at dedicated facilities) PROC 9 (Transfer of substance or preparation into small containers [dedicated filling line, including weighing]) PROC 14 (Production of preparations or articles by tableting, compression, extrusion, pelletisation)
Article category (AC)	Not applicable
Environmental release category (ERC)	ERC 2 (Formulation of preparations) ERC 6b (Industrial use of reactive processing aid)



	ERC 7 (Industrial use of substances in closed systems)
3. Operational conditions	
3.1 Duration and frequency of use for which the exposure scenario ensures control of risk	
Duration of exposure at workplace:	8 hours/day
Frequency of exposure at workplace:	220 days/year for each worker (EC, 2008b, p. 8)
Annual amount used per site:	<15,000 tonnes/year (a specific assessment of environmental concentrations has to be performed for sites using more sodium percarbonate per year)
Emission days per site:	300 days/year
4.1 Physical form of product in which the substance is contained	
Solid	
4.2 Concentration of substance in preparation or article	
Formulated mixtures may contain up to 25% sodium percarbonate; some bleaching products may contain higher amounts of sodium percarbonate.	
4.3 Amount used per time or per activity for which the risk management measures (RMMs), in combination with other operational conditions of use ensure control of risk	
RMM and other operational conditions of use ensure control of risk at any given time and for any given throughput during the manufacture of sodium percarbonate.	
5. Other operational conditions determining exposure, e.g. temperature, capacity of receiving environment (water flow; room size x ventilation rate), emission or release factors to the relevant compartments	
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.	
6. RMMs that, in combination with the operational conditions of use, ensure control of risk related to the different target groups	
6.1 RMMs related to workers	
Technical measures	Good general and local exhaust ventilation with an efficiency of 90% is recommended for formulation.
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.
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.
Hand protection	Wearing of permeation resistant gloves with suitable materials for safety gloves is required. Suitable materials are PVC, Neoprene, Natural rubber
Eye protection	Wearing of eye/face protection is required. Chemical goggles should be consistent with EN 166 or equivalent.
Skin and body protection	Wearing of suitable protective clothing is required.
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.
6.2 Environment related measures; type and efficiency of single options or combination of options on exposure to be quantified; options to be phrased as instructive guidance	
Organisational measures	Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures.
Abatement measures wastewater	Wastewater is treated in chemical/biological on-site or municipal wastewater treatment plants.
Abatement measures waste air	Waste air has to be cleaned by passing through dust filters or wet scrubbers.
Soil	All relevant soil surfaces in the facility have to be covered to avoid drainage of substance into soil.
7. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
Type of waste	Solid waste (e.g. dust filters).
Disposal technique	Contaminated packaging material is decontaminated and deposited or incinerated. Solid waste substance is transferred into wastewater.
Fraction released to environment during waste treatment	Reasonable worst case emission fraction for wastewater is 2% of annual tonnage, i.e. 300 tonnes/year
8. Prediction of exposure resulting from the conditions described above (entries 3 - 6) and the substance properties. Data are given as measured data or as generated with ECETOC TRA.	
Workers (oral)	No significant oral exposure due to good hygiene practice.
Workers (dermal)	Calculated with ECETOC TRA
PROC 1	0.34 mg/kg bw/day, 0.1 mg/cm <sup>2</sup>
PROC 2	1.37 mg/kg bw/day, 0.2 mg/cm <sup>2</sup>
PROC 3	0.34 mg/kg bw/day, 0.1 mg/cm <sup>2</sup>

PROC 4	6.86 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 5	13.71 mg/kg bw/day, 2 mg/cm <sup>2</sup>
PROC 8a	13.71 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 8b	6.86 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 9	6.86 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 14	3.43 mg/kg bw/day, 0.5 mg/cm <sup>2</sup>
Workers (inhalation)	Calculated with ECETOC TRA
PROC 1	0.01 mg/m <sup>3</sup>
PROC 2	0.01 mg/m <sup>3</sup>
PROC 3	0.1 mg/m <sup>3</sup>
PROC 4	0.5 mg/m <sup>3</sup>
PROC 5	0.5 mg/m <sup>3</sup>
PROC 8a	0.5 mg/m <sup>3</sup>
PROC 8b	0.1 mg/m <sup>3</sup>
PROC 9	0.1 mg/m <sup>3</sup>
PROC 14	0.1 mg/m <sup>3</sup>
Consumer	Not applicable
Environment	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 m <sup>3</sup> /day capacity, dilution capacity of 10) results in PECs given below. If no onsite treatment is performed and wastewater is not disposed of via the public sewer system, the conditions have to be such that the PNEC aquatic for freshwater and marine water (0.035 mg/L sodium percarbonate or 0.01 mg/L hydrogen peroxide) is respected.
Air	Not applicable
Freshwater	0.0031 mg/L (hydrogen peroxide)
Seawater	0.0031 mg/L (hydrogen peroxide)
Freshwater sediment	Not applicable
Marine sediment	Not applicable
Soil	Not applicable
STP	1 mg/L (hydrogen peroxide)
Humans via the environment	Not applicable

**Summary of exposure scenario 3: Industrial and professional use of**

## ***cleaning products and other mixtures containing sodium percarbonate***

1. Short title of exposure scenario 3	
Industrial and professional use of cleaning products and other mixtures containing sodium percarbonate	
2. Description of activities and processes covered in the exposure scenario 3	
Sector of use (SU)	SU 1 (Agriculture, forestry, fishery) SU 5 (Manufacture of textiles, leather, fur) SU 22 (Professional uses: Public domain)
Product category (PC)	PC 8, 14, 15, 20, 25, 34, 35, 36, 37, 39
Process category (PROC )	PROC 2 (Use in closed, continuous process with occasional controlled exposure) PROC 4 (Use in batch and other process [synthesis] where opportunity for exposure arises) PROC 8a (Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at non-dedicated facilities) PROC 8b (Transfer of substance or preparation [charging/discharging] from/to vessels/large containers at dedicated facilities) PROC 15 (Use as laboratory agent) Exposure to hydrogen peroxide in solutions: PROC 10 (Roller application or brushing) PROC 11 (Non-industrial spraying) PROC 13 (Treatment of articles by dipping and pouring) PROC 19 (Hand-mixing with intimate contact and only PPE available)
Article category (AC)	Not applicable
Environmental release category (ERC)	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)
3. Operational conditions	
3. 1 Duration and frequency of use for which the exposure scenario ensures control of risk	
Duration of exposure at workplace:	8 hours/day
Frequency of exposure at workplace:	220 days/year for each worker (EC, 2008b, p. 8)

Annual amount used per site:	Wide dispersive use; total EU tonnage is 250,000 tonnes/year
Emission days per site:	360 days/year
4. 1 Physical form of product in which the substance is contained	
Solid	
4.2 Concentration of substance in preparation or article	
Formulated mixtures may contain up to 25% sodium percarbonate; some bleaching products may contain higher amounts of sodium percarbonate.	
4.3 Amount used per time or per activity for which the risk management measures (RMMs), in combination with other operational conditions of use ensure control of risk	
RMM and other operational conditions of use ensure control of risk at any given time and for any given throughput during the manufacture of sodium percarbonate.	
5. Other operational conditions determining exposure, e.g. temperature, capacity of receiving environment (water flow; room size x ventilation rate), emission or release factors to the relevant compartments	
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 <sup>3</sup> /day and a dilution by a factor of 10 is taken into account in the generic calculation of PECs.	
6. RMMs that, in combination with the operational conditions of use, ensure control of risk related to the different target groups	
6.1 RMMs related to workers	
Technical measures	Local exhaust ventilation with an efficiency of 90% may be present.
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.
Respiratory protection	Respiratory protection with an efficiency of 90% is necessary when aqueous solutions of sodium percarbonate are used for non-industrial spraying.
Hand protection	Wearing of permeation resistant gloves with suitable materials for safety gloves is recommended. Suitable materials are PVC, Neoprene, Natural rubber
Eye protection	Wearing of eye/face protection is recommended. Chemical goggles should be consistent with EN 166 or equivalent.
Skin and body protection	Wearing of suitable protective clothing is recommended.
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.

6.2 Environment related measures; type and efficiency of single options or combination of options on exposure to be quantified; options to be phrased as instructive guidance	
Organisational measures	Procedural and/or control technologies are required to minimise emissions and the resulting exposure during cleaning and maintenance procedures.
Abatement measures wastewater	Wastewater is treated in chemical/biological on-site or municipal wastewater treatment plants.
Abatement measures waste air	No specific treatment of waste air is taken into account.
Soil	All relevant soil surfaces in the facility have to be covered to avoid drainage of substance into soil.
7. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
Type of waste	Packaging material.
Disposal technique	Contaminated packaging material is disposed of properly.
Fraction released to environment during waste treatment	Reasonable worst case emission fraction for wastewater is 100% of annual tonnage, i.e. 250,000 tonnes/year
8. Prediction of exposure resulting from the conditions described above (entries 3 - 6) and the substance properties. Data are given as measured data or as generated with ECETOC TRA.	
Workers (oral)	No significant oral exposure due to good hygiene practice.
Workers (dermal)	Calculated with ECETOC TRA
PROC 2	1.37 mg/kg bw/day, 0.2 mg/cm <sup>2</sup>
PROC 4	6.86 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 8a	13.71 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 8b	6.86 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 15	0.34 mg/kg bw/day, 0.1 mg/cm <sup>2</sup>
PROC 19	141 mg/kg bw/day, 5 mg/cm <sup>2</sup>
Professionals (dermal)	Calculated with ECETOC TRA
PROC 8a	13.71 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 8b	6.86 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 9	6.86 mg/kg bw/day, 1 mg/cm <sup>2</sup>
PROC 19	141 mg/kg bw/day, 5 mg/cm <sup>2</sup>
PROC 10 (solution H <sub>2</sub> O <sub>2</sub> )	27.4 mg/kg bw/day, 2 mg/cm <sup>2</sup>
PROC 11 (solution H <sub>2</sub> O <sub>2</sub> )	107 mg/kg bw/day, 5 mg/cm <sup>2</sup>

PROC 13 (solution H <sub>2</sub> O <sub>2</sub> )	13.71 mg/kg bw/day, 2 mg/cm <sup>2</sup>
PROC 19 (solution H <sub>2</sub> O <sub>2</sub> )	141 mg/kg bw/day, 5 mg/cm <sup>2</sup>
Workers (inhalation)	Calculated with ECETOC TRA
PROC 2	0.01 mg/m <sup>3</sup>
PROC 4	0.5 mg/m <sup>3</sup>
PROC 8a	0.5 mg/m <sup>3</sup>
PROC 8b	0.1 mg/m <sup>3</sup>
PROC 19	0.1 mg/m <sup>3</sup>
Professionals (inhalation)	Calculated with ECETOC TRA
PROC 8a	0.5 mg/m <sup>3</sup>
PROC 8b	0.5 mg/m <sup>3</sup>
PROC 9	0.5 mg/m <sup>3</sup>
PROC 19	0.5 mg/m <sup>3</sup>
Use of aqueous solution	Predicted airborne concentrations of hydrogen peroxide
PROC 10 (solution H <sub>2</sub> O <sub>2</sub> )	1.24 mg/m <sup>3</sup> (maximum PCS concentration in solution about 12% w/w)
PROC 11 (solution H <sub>2</sub> O <sub>2</sub> )	1.35 mg/m <sup>3</sup> (maximum PCS concentration in solution about 33% w/w)
PROC 13 (solution H <sub>2</sub> O <sub>2</sub> )	1.34 mg/m <sup>3</sup> (maximum PCS concentration in solution about 19% w/w)
PROC 19 (solution H <sub>2</sub> O <sub>2</sub> )	1.24 mg/m <sup>3</sup> (maximum PCS concentration in solution about 12% w/w)
Consumer	Not applicable
Environment	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 m <sup>3</sup> /day capacity, dilution capacity of 10) results in PECs given below:
Air	Not applicable
Freshwater	0.0004 mg/L (hydrogen peroxide)
Seawater	0.0004 mg/L (hydrogen peroxide)
Freshwater sediment	Not applicable
Marine sediment	Not applicable
Soil	Not applicable
STP	0.004 mg/L (hydrogen peroxide)
Humans via the environment	Not applicable

**Summary of exposure scenario 4: Private use of cleaning products and other mixtures containing sodium percarbonate**

1. Short title of exposure scenario 4	
Private use of cleaning products and other mixtures containing sodium percarbonate	
2. Description of activities and processes covered in the exposure scenario 4	
Sector of use (SU)	SU 21 (Consumer uses: Private households)
Product category (PC)	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)
Process category (PROC )	Not applicable
Article category (AC)	Not applicable
Environmental release category (ERC)	ERC 8a (Wide dispersive indoor use of processing aids in open systems) ERC 8b (Wide dispersive indoor use of reactive substances in open systems)
3. Operational conditions	
3. 1 Duration and frequency of use for which the exposure scenario ensures control of risk	
Duration of exposure:	Laundry detergents: 1 minute transfer, 20 minutes use phase Bleaches: 10 minutes use phase
Frequency of exposure:	Laundry detergents: 3 times a day Bleaches: once a day
Use amount per event:	Laundry detergents: 290 g/event Bleaches: 70 g/event
Emission days:	360 days/year
4. 1 Physical form of product in which the substance is contained	
Solid	
4.2 Concentration of substance in preparation or article	
Formulated mixtures may contain up to 25% sodium percarbonate; some bleaching products may contain higher amounts of sodium percarbonate.	
4.3 Amount used per time or per activity for which the risk management measures (RMMs), in combination with other operational conditions of use ensure control of risk	
Not applicable	
5. Other operational conditions determining exposure, e.g. temperature, capacity of receiving environment (water	



flow; room size x ventilation rate), emission or release factors to the relevant compartments	
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 <sup>3</sup> /day and a dilution by a factor of 10 is taken into account in the generic calculation of PECs.	
6. RMMs that, in combination with the operational conditions of use, ensure control of risk related to the different target groups	
6.1 RMMs related to consumers	
Technical measures	Not applicable
Organisational measures	Keep out of the reach of children.
Respiratory protection	Not applicable
Hand protection	Not applicable
Eye protection	The use of eye protection is recommended to avoid contact of the eyes with the undiluted product.
Skin and body protection	Not applicable
Hygiene measures	Keep away from foodstuffs, drinks and tobacco. Wash hands thoroughly after open handling of the product.
6.2 Environment related measures; type and efficiency of single options or combination of options on exposure to be quantified; options to be phrased as instructive guidance	
Organisational measures	Not applicable
Abatement measures wastewater	Wastewater is treated in chemical/biological municipal wastewater treatment plants.
Abatement measures waste air	Not applicable
Soil	No measures
7. Waste related measures needed to ensure control of risk at the different life cycle stages of the substances (including preparations or articles at the end of service life)	
Type of waste	Packaging material.
Disposal technique	Contaminated packaging material is disposed of properly.
Fraction released to environment during waste treatment	Reasonable worst case emission fraction for wastewater is 100% of annual tonnage, i.e. 250,000 tonnes/year
8. Prediction of exposure resulting from the conditions described above (entries 3 - 6) and the substance properties. Data are given as measured data or as generated with ECETOC TRA.	

Consumer (dermal)	Calculated using generic algorithms of EU TGD
Transfer laundry detergent	1.5 mg/kg bw/day, 0.19 mg/cm <sup>2</sup>
Transfer bleach	6 mg/kg bw/day, 0.75 mg/cm <sup>2</sup>
Manual washing	2.64 mg/kg bw/day, 0.08 mg/cm <sup>2</sup>
Consumer (inhalation)	Not relevant according to AISE (2009) Approximately 0.0003 mg dust formed during transfer (HERA 2002)
Environment	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 m <sup>3</sup> /day capacity, dilution capacity of 10) results in PECs given below:
Air	Not applicable
Freshwater	0.0004 mg/L (hydrogen peroxide)
Seawater	0.0004 mg/L (hydrogen peroxide)
Freshwater sediment	Not applicable
Marine sediment	Not applicable
Soil	Not applicable
STP	0.004 mg/L (hydrogen peroxide)
Humans via the environment	Not applicable