BRENNTAG

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

SODIUM PERCARBONATE COATED

Version 1.0 Print Date 18.05.2023

Revision date / valid from 17.05.2023

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

1.1. Product identifier

Trade name	:	SODIUM PERCARBONATE COATED
Substance name	:	Disodium carbonate, compound with hydrogen peroxide (2:3)
CAS-No.	:	15630-89-4
EC-No.	:	239-707-6
EU REACH-Reg. No.	:	01-2119457268-30-xxxx
REACH Status	:	Supplier confirmed compliance of substance/substances in product with REACH (Regulation (EC) No 1907/2006)

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

Use of the Substance/Mixture	:	Raw material for industry
Uses advised against	:	At this moment we have not identified any uses advised against

1.3. Details of the supplier of the safety data sheet

Company	:	Brenntag N.V. Nijverheidslaan 38 BE 8540 Deerlijk
Telephone	:	+32 (0)56 77 6944
Telefax	:	+32 (0)56 77 5711
E-mail address	:	info@brenntag.be
Responsible/issuing person	:	Master Data Administration
Company	:	Brenntag Nederland B.V. Donker Duyvisweg 44 NL 3316 BM Dordrecht
Telephone	:	+31 (0)78 65 44 944
Telefax	:	+31 (0)78 65 44 919
E-mail address	:	info@brenntag.nl
Responsible/issuing person	:	Master Data Administration

1.4. Emergency telephone number

Emergency telephone number	:	Belgium: Antipoison Center - Brussels TEL: +32(0)70 245 245 Netherland: National Poisoning Information Center - Bilthoven TEL: +31(0) 88 755 8000 (Only for the purpose of informing

medical personnel in cases of acute intoxications)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008			
Hazard class	**Hazard category**	**Target Organs**	**Hazard statements**
Oxidizing solids	Category 3	---	H272
Acute toxicity (Oral)	Category 4	---	H302
Serious eye damage	Category 1	---	H318

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

Most important adverse effects

Human Health : See section 11 for toxicological information.

Physical and chemical hazards : See section 9/10 for physicochemical information.

Potential environmental effects : See section 12 for environmental information.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard symbols :

Signal word : Danger

Hazard statements :

H272	May intensify fire; oxidizer.
H302	Harmful if swallowed.
H318	Causes serious eye damage.

Precautionary statements

Prevention :

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	Keep away from clothing and other combustible materials.

		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	:	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P370 + P378	In case of fire: Use only water to extinguish.
Disposal	:	P501	Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

- Disodium carbonate, compound with hydrogen peroxide (2:3)

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
Disodium carbonate, compound with hydrogen peroxide (2:3)			
CAS-No. : 15630-89-4 EC-No. : 239-707-6 EU REACH-Reg. No. : 01-2119457268-30-xxxx	>= 90	Ox. Sol.3 Acute Tox.4 Oral Eye Dam.1 Acute toxicity estimate Acute oral toxicity: 1034 mg/kg Acute dermal toxicity: 2000,01 mg/kg	H272 H302 H318
sodium carbonate			

Index-No. : 011-005-00-2 CAS-No. : 497-19-8 EC-No. : 207-838-8		< 11	Eye Irrit.2	H319
Silicic acid, sodium salt				
CAS-No. : 1344-09-8 EC-No. : 215-687-4		< 2	Met. Corr.1 Skin Corr.1B Eye Dam.1 STOT SE3	H290 H314 H318 H335

Remarks : The first mentioned substance is the main constituent. Additional listed substances are non-reacted reactants or impurities or additives.

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Take off all contaminated clothing immediately.

If inhaled : Remove to fresh air. If symptoms persist, call a physician.

In case of skin contact : After contact with skin, wash immediately with plenty of soap and water. If symptoms call a physician.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.

If swallowed : Rinse mouth with water. Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Call a physician immediately.

Protection of First Aid Responders : First Aid responders should pay attention to self-protection and use the recommended protective clothing.
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

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

Symptoms : Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. See Section 11 for more detailed information on health effects and symptoms.

Effects : Harmful if swallowed. Causes serious eye damage. See Section 11 for more detailed information on health effects and

symptoms.

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

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Water spray, foam, dry powder or CO2.
Unsuitable extinguishing media	:	High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	The product itself does not burn. The product is oxidizing. May intensify fire; oxidizer. Oxygen released on exothermic decomposition may support combustion in case of surrounding fire.
Hazardous combustion products	:	Carbon monoxide, Carbon dioxide (CO2), Under certain fire conditions, traces of other toxic products cannot be excluded.

5.3. Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.Wear personal protective equipment.
Further advice	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Keep away unprotected persons. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe gas/fumes/vapour/spray.

6.2. Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	:	Use mechanical handling equipment. Keep in suitable, closed containers for disposal. Avoid dust formation.
Further information	:	Treat recovered material as described in the section "Disposal

considerations".

6.4. Reference to other sections

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	:	Keep container tightly closed. Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapours/dust. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.
Hygiene measures	:	Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store in original container. Keep away from heat and sources of ignition. Keep away from direct sunlight. Do not store near combustible materials.
Advice on protection against fire and explosion	:	Oxidizing; Contact with combustible material may cause fire. Keep away from sources of ignition - No smoking.
Further information on storage conditions	:	Keep tightly closed in a dry and cool place. Keep away from sources of ignition - No smoking.
Advice on common storage	:	Keep away from combustible material. Keep away from food, drink and animal feedingstuffs. Incompatible with: Acids Reducing agents alkalis
Storage temperature	:	< 40 °C
Suitable packaging materials	:	Stainless steel, Polyethylene
Unsuitable packaging materials	:	, Iron, Copper, Zinc, Nickel

7.3. Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Other Occupational Exposure Limit Values		
(Additional) Information	:	Contains no substances with occupational exposure limit values. Contains no substances with occupational exposure limit values.

Component:	Disodium carbonate, compound with hydrogen peroxide (2:3)	CAS-No. 15630-89-4

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

DNEL Workers, Long-term - local effects, Inhalation	:	5 mg/m3
DNEL Workers, Long-term - local effects, Skin contact	:	12,8 mg/cm2
DNEL Workers, Acute - local effects, Skin contact	:	12,8 mg/cm2
DNEL Consumers, Long-term - local effects, Skin contact	:	6,4 mg/cm2
DNEL Consumers, Acute - local effects, Skin contact	:	6,4 mg/cm2

Predicted No Effect Concentration (PNEC)

Fresh water	:	0,035 mg/l
Marine water	:	0,0035 mg/l
Sewage treatment plant (STP)	:	16,24 mg/l

8.2. Exposure controls

Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

Respiratory protection

Advice	:	In case of insufficient ventilation, wear suitable respiratory equipment. Required if dust is released Respiratory protection complying with EN 143.

Particle filter:P2

Hand protection

Advice	:	Wear suitable gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Protective gloves should be replaced at first signs of wear.
Material	:	Nitrile rubber
Break through time	:	> 480 min
Material	:	PVC
Break through time	:	> 480 min

Eye protection

Advice	:	Goggles giving complete protection to the eyes

Skin and body protection

Advice	:	Wear personal protective equipment.

Environmental exposure controls

General advice	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	:	Crystalline solid
Physical state	:	solid
Colour	:	white
Odour	:	odourless
Odour Threshold	:	No data available
Melting point/range	:	Decomposition

Boiling point/boiling range	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	> 65 °C
Self-Accelerating decomposition temperature (SADT)	:	No data available
pH	:	10,4 - 10,7 (20 °C) Concentration: 10 g/l
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Flow time	:	No data available
Solubility(ies)		
Water solubility	:	140 g/l (20 °C)
Solubility in other solvents	:	No data available
Dissolution Rate	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Dispersion Stability	:	No data available
Vapour pressure	:	< 0,001 Pa (25 °C)
Relative density	:	2,01 (20 °C)
Density	:	2,01 - 2,16 g/cm3
Bulk density	:	No data available
Relative vapour density	:	Not applicable
Particle characteristics		

No data available

9.2 Other information

Explosives	:	Product is not explosive.
Evaporation rate	:	No data available
Molecular weight	:	314,06 g/mol

SECTION 10: Stability and reactivity

10.1. Reactivity

Advice : No decomposition if stored and applied as directed.
The substance itself does not burn, but in contact with combustible substances it increases the risk of fire and can fuel any existing fire substantially.

10.2. Chemical stability

Advice : Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : Contact with combustible material may cause fire. May intensify fire; oxidizer. Exothermic reaction with: Acids Water

10.4. Conditions to avoid

Conditions to avoid : Protect from humidityHeat, flames and sparks.Keep away from direct sunlight.

Thermal decomposition : > 65 °C

10.5. Incompatible materials

Materials to avoid : Keep away from combustible material. Water, Acids and bases, Reducing agents, Organic materials, metal salts, Metal oxides, Metals

10.6. Hazardous decomposition products

Hazardous decomposition products : Oxygen, Carbon dioxide (CO2), Carbon monoxide, Steam, Water, Peroxides, Sodium oxides, Under certain fire conditions, traces of other toxic products cannot be excluded.

SECTION 11: Toxicological information

11.1. Information on the hazard classes within the meaning of Regulation (EC) No. 1272/2008

Data for the product
Acute toxicity

Oral

Acute toxicity estimate	:	1035 mg/kg) (Calculation method)Harmful if swallowed.

Inhalation

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

Dermal

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

Irritation

Skin

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

Eyes

Result	:	Causes serious eye damage.

Sensitisation

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

CMR effects

CMR Properties

Carcinogenicity	:	Based on available data, the classification criteria are not met.
Mutagenicity	:	Based on available data, the classification criteria are not met.
Reproductive toxicity	:	Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity

Single exposure

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

Repeated exposure

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

Other toxic properties

Aspiration hazard

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

Component:	**Disodium carbonate, compound with hydrogen peroxide (2:3)**	**CAS-No. 15630-89-4**

Acute toxicity

Inhalation

No data available

Dermal

LD50	:	> 2000 mg/kg (Rabbit) (OECD Test Guideline 402)Literature value

Irritation

Skin

Result	:	No skin irritation (Rabbit)

Eyes

Result	:	Causes serious eye damage. (Rabbit)

Sensitisation

Result	:	not sensitizing (Buehler Test; Guinea pig) (OECD Test Guideline 406)Literature value

CMR effects

CMR Properties

Carcinogenicity	:	It is not considered carcinogenic.
Mutagenicity	:	No data available
Teratogenicity	:	No data available
Reproductive toxicity	:	No data available

Specific Target Organ Toxicity

Single exposure

Remarks	:	No data available

Repeated exposure

Remarks	:	No data available

Other toxic properties

Aspiration hazard

Not applicable,

Further information		
Experience with human exposure	:	Irritating to eyes and skin.,

11.2. Information on other hazards

Data for the product		
Endocrine disrupting properties		
Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Component:	**Disodium carbonate, compound with hydrogen peroxide (2:3)**	**CAS-No. 15630-89-4**
Endocrine disrupting properties		
Assessment	:	No information available about endocrine disruption properties for human health.

SECTION 12: Ecological information

12.1. Toxicity

Data for the product		
Acute toxicity		
Short-term (acute) aquatic hazard		
Result	:	Based on available data, the classification criteria are not met.
Chronic toxicity		
Long-term (chronic) aquatic hazard		
Result	:	Based on available data, the classification criteria are not met.

Component:	**Disodium carbonate, compound with hydrogen peroxide (2:3)**	**CAS-No. 15630-89-4**
Acute toxicity		
Fish		
LC50	:	70,7 mg/l (Pimephales promelas; 96 h) (semi-static test)Literature value

Toxicity to daphnia and other aquatic invertebrates		
EC50	:	4,9 mg/l (Daphnia pulex (Water flea); 48 h) (semi-static test)Literature value

algae		
EC50	:	7,7 mg/l (algae; 72 h) Literature value

Bacteria		
EC50	:	466 mg/l (activated sludge; 30 min; Test substance: Hydrogen peroxide) (OECD Test Guideline 209)Literature value

Chronic toxicity		
Aquatic invertebrates		
NOEC		2 mg/l (Daphnia pulex (Water flea); 48 d) (semi-static test)

12.2. Persistence and degradability

Component:	Disodium carbonate, compound with hydrogen peroxide (2:3)	CAS-No. 15630-89-4
Persistence and degradability		
Persistence		
Result	:	The product can be degraded by abiotic (e.g. chemical or photolytic) processes.
Biodegradability		
Result	:	The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Component:	Disodium carbonate, compound with hydrogen peroxide (2:3)	CAS-No. 15630-89-4
Bioaccumulation		
Result	:	log Kow -1,57
	:	Does not bioaccumulate.

12.4. Mobility in soil

Component:	Disodium carbonate, compound with hydrogen peroxide (2:3)	CAS-No. 15630-89-4
Mobility		

Water	:	The product is water soluble.
Soil	:	Will not adsorb on soil.

12.5. Results of PBT and vPvB assessment

Data for the product		
Results of PBT and vPvB assessment		
Result	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6. Endocrine disrupting properties

Data for the product		
Endocrine disrupting potential	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Component:	Disodium carbonate, compound with hydrogen peroxide (2:3)	CAS-No. 15630-89-4
Endocrine disrupting potential	:	No information available about endocrine disruption properties for environment.

12.7. Other adverse effects

Data for the product		
Additional ecological information		
Result	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

Component:	Disodium carbonate, compound with hydrogen peroxide (2:3)	CAS-No. 15630-89-4
Adsorbed organic bound halogens (AOX)		
Result	:	Product does not contain any organic halogens.

Additional ecological information

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	:	Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.
Contaminated packaging	:	Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. If recycling is not practicable, dispose of in compliance with local regulations.
European Waste Catalogue Number	:	No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

14.1. UN number or ID number

3378

14.2. UN proper shipping name

ADR : SODIUM CARBONATE PEROXYHYDRATE
RID : SODIUM CARBONATE PEROXYHYDRATE
IMDG : SODIUM CARBONATE PEROXYHYDRATE

14.3. Transport hazard class(es)

ADR-Class (Labels; Classification Code; Hazard Identification Number; Tunnel restriction code)	:	5.1 5.1; O2; 50; (E)
RID-Class (Labels; Classification Code; Hazard Identification Number)	:	5.1 5.1; O2; 50
IMDG-Class (Labels; EmS)	:	5.1 5.1; F-A, S-Q

14.4. Packaging group

ADR : III
RID : III
IMDG : III

14.5. Environmental hazards

Environmentally hazardous according to ADR	: no
Environmentally hazardous according to RID	: no
Marine Pollutant according to IMDG-Code	: no

14.6. Special precautions for user

Not applicable.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Component:	**Disodium carbonate, compound with hydrogen peroxide (2:3)**	**CAS-No. 15630-89-4**

EU. Chemicals Subject to PIC Procedure: Regulation 649/2012/EU on export and import of dangerous chemicals, as amended	:	; The substance/mixture does not fall under this legislation.
EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC)	:	; The substance/mixture does not fall under this legislation.
EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I	:	Qualifying quantity for the application of Lower-tier requirements: 50 tonnes; Part 1: Categories of dangerous substances; Oxidising Liquids, Category 1, 2 or 3, or; Oxidising Solids, Category 1, 2 or 3 Qualifying quantity for the application of Upper-tier requirements: 200 tonnes; Part 1: Categories of dangerous substances; Oxidising Liquids, Category 1, 2 or 3, or; Oxidising Solids, Category 1, 2 or 3

Notification status

Disodium carbonate, compound with hydrogen peroxide (2:3):

Regulatory List	Notification	Notification number
EINECS	YES	239-707-6
DSL	YES	
ENCS (JP)	YES	(1)-164
ISHL (JP)	YES	(1)-164
KECI (KR)	YES	KE-05-0572
ONT INV	YES	
IECSC	YES	
TCSI	YES	
PICCS (PH)	YES	
TSCA	YES	
VN INVL	YES	
TH INV	YES	55-1-02066
TH INV	YES	2836.99
AU AIICL	YES	
NZIOC	YES	

15.2. Chemical safety assessment

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

SECTION 16: Other information

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

H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Full text of the Notes referred to under section 3.

Abbreviations and Acronyms

AU AIICL	Australia. Industrial Chemicals Act (AIIC) List
BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
DSL	Canada. Environmental Protection Act, Domestic Substances List

EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS (JP)	Japan. Kashin-Hou Law List
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IECSC	China. Inventory of Existing Chemical Substances
INSQ	Mexico. National Inventory of Chemical Substances
ISHL (JP)	Japan. Inventory of Industrial Safety & Health
KECI (KR)	Korea. Existing Chemicals Inventory
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NDSL	Canada. Environmental Protection Act. Non-Domestic Substances List
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
NZIOC	New Zealand. Inventory of Chemicals
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
ONT INV	Canada. Ontario Inventory List
PBT	persistent, bioaccumulative and toxic
PHARM (JP)	Japan. Pharmacopoeia Listing
PICCS (PH)	Philippines. Inventory of Chemicals and Chemical Substances
PNEC	predicted no-effect concentration
REACH Auth. No.:	REACH Authorisation Number
REACH AuthAppC. No.	REACH Authorisation Application Consultation Number
STOT	specific target organ toxicity
SVHC	substance of very high concern
TCSI	Taiwan. Existing Chemicals Inventory
TH INV	Thailand. Existing Chemicals Inventory from FDA
TSCA	US. Toxic Substances Control Act
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
VN INVL	Vietnam. National Chemical Inventory
vPvB	very persistent and very bioaccumulative

Further information

Key literature references : Supplier information and data from the "Database of registered

and sources for data		substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.
Methods used for product classification	:	The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.
Hints for trainings	:	The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.
Other information	:	The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.
	:	The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	8	NA	1, 2, 4, 8b, 9	1	NA	ES12236
2	Formulation & (re)packing of substances and mixtures	3	10	8, 14, 15, 20, 25, 34, 35, 36, 37, 39	1, 2, 3, 4, 5, 8a, 8b, 9, 14	2, 6b, 7	NA	ES4679
3	Professional use	22	1, 5	8, 14, 15, 20, 25, 34, 35, 36, 37, 39	8a, 8b, 9, 10, 11, 13, 19	8a, 8b, 8e	NA	ES4681
4	Consumer use	21	NA	8, 35, 36, 37, 39	NA	8a, 8b	NA	ES4683

1. Short title of Exposure Scenario 1: Manufacture of substance		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products)	
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
Environmental Release Categories	ERC1: Manufacture of substances	
2.1 Contributing scenario controlling environmental exposure for: ERC1		
Amount used	Annual amount per site	< 50000 ton(s)/year
Other given operational conditions affecting environmental exposure	Number of emission days per year	360
Technical conditions and measures at process level to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Waste air should be scrubbed or filtered
	Water	All contaminated waste water must be processed in an industrial or municipal wastewater treatment plant that incorporates both primary and secondary treatments.
	Soil	Sealing of all relevant soil surfaces in the facility
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Dispose of waste in accordance with environmental legislation.
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC8b, PROC9		
Product characteristics	Physical Form (at time of use)	solid
Frequency and duration of use	Frequency of use	220 days/year
	Covers daily exposures up to 8 hours	
Technical conditions and measures to control dispersion from source towards the worker	Provide local exhaust ventilation (LEV). (Efficiency: 90 %)	
Organisational measures to prevent /limit releases, dispersion and exposure	Monitoring measures are required to minimise emissions and resulting exposures during cleaning and maintenance activities or in the case of exceeding of occupational exposure limits	

Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable protective clothing, gloves and eye/face protection. Use eye protection according to EN 166.	
	Operation of solids filtering equipment Cleaning of solids filtering equipment	Wear respiratory protection Particle filter:P2

3. Exposure estimation and reference to its source

Environment

ERC1: EUSES

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1	---	Fresh water	PEC	< 0,001mg/L	---
ERC1	---	Marine water	PEC	< 0,001mg/L	---
ERC1	---	Sewage treatment plant (STP)	PEC	< 0,013mg/L	---

Workers

PROC1, PROC2, PROC4, PROC8b, PROC9: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Dermal worker exposure	0,1mg/cm²	---
PROC2	---	Dermal worker exposure	0,2mg/cm²	---
PROC4, PROC8b, PROC9	---	Dermal worker exposure	1mg/cm²	---
PROC1, PROC2	---	Inhalation worker exposure	0,01mg/m³	---
PROC4	---	Inhalation worker exposure	0,5mg/m³	---
PROC8b, PROC9	---	Inhalation worker exposure	0,1mg/m³	---

Oral exposure is regarded to be not relevant.

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 2: Formulation & (re)packing of substances and mixtures	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Chemical product category	PC8: Biocidal products (e.g. Disinfectants, pest control) PC14: Metal surface treatment products, including galvanic and electroplating products PC15: Non-metal-surface treatment products PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC25: Metal working fluids PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids PC35: Washing and cleaning products PC36: Water softeners PC37: Water treatment chemicals PC39: Cosmetics, personal care products
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation
Environmental Release Categories	ERC2: Formulation of preparations ERC6b: Industrial use of reactive processing aids ERC7: Industrial use of substances in closed systems
Activity	Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered

2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC6b, ERC7		
Amount used	Annual site tonnage	15000
Environment factors not influenced by risk management	Dilution Factor (River)	10

Other given operational conditions affecting environmental exposure	Number of emission days per year	300
	Emission or Release Factor: Water	2 %
	Waste water, .	
Technical conditions and measures at process level to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Exhaust ventilation equipped with filters., or, Wet scrubbers
	Water	Any wastewater should be emitted to the STP
	Soil	Sealing of all relevant soil surfaces in the facility
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Type of Sewage Treatment Plant	Onsite sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
Conditions and measures related to external treatment of waste for disposal	Additional data in section 13 of the safey data sheet	
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	solid
Frequency and duration of use	Frequency of use	220 days/year
	Covers daily exposures up to 8 hours	
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Provide local exhaust ventilation (LEV). (Efficiency: 90 %)	
Organisational measures to prevent /limit releases, dispersion and exposure	Monitoring measures are required to minimise emissions and resulting exposures during cleaning and maintenance activities or in the case of exceeding of occupational exposure limits	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable protective clothing, gloves and eye/face protection. Use eye protection according to EN 166.	
	Operation of solids filtering equipment Cleaning of solids	Wear respiratory protection Particle filter:P2 (Efficiency: 90 %)

filtering equipment	

3. Exposure estimation and reference to its source

Environment

Relevant for all ERCs: EUSES

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
Relevant for all ERCs	---	Fresh water	PEC	0,0031mg/L	---
Relevant for all ERCs	---	Marine water	PEC	0,0031mg/L	---
Relevant for all ERCs	Aqueous form	Sewage treatment plant (STP)	PEC	1mg/L	---

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1, PROC3	---	Dermal worker exposure	0,1mg/cm²	---
PROC2	---	Dermal worker exposure	0,2mg/cm²	---
PROC4, PROC8a, PROC8b, PROC9	---	Dermal worker exposure	1mg/cm²	---
PROC5	---	Dermal worker exposure	2mg/cm²	---
PROC14	---	Dermal worker exposure	0,5mg/cm²	---
PROC1, PROC2	---	Inhalation worker exposure	0,01mg/m³	---
PROC3, PROC8b, PROC9, PROC14	---	Inhalation worker exposure	0,1mg/m³	---
PROC4, PROC5, PROC8a	---	Inhalation worker exposure	0,5mg/m³	---

Oral exposure is regarded to be not relevant.

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks

are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 3: Professional use		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Sectors of end-use	SU1: Agriculture, forestry, fishery SU5: Manufacture of textiles, leather, fur	
Chemical product category	PC8: Biocidal products (e.g. Disinfectants, pest control) PC14: Metal surface treatment products, including galvanic and electroplating products PC15: Non-metal-surface treatment products PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC25: Metal working fluids PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids PC35: Washing and cleaning products PC36: Water softeners PC37: Water treatment chemicals PC39: Cosmetics, personal care products	
Process categories	PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems	
Activity	Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered	
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8e		
Amount used	Amounts used in the EU (tonnes/year)	250000
Environment factors not influenced by risk management	Dilution Factor (River)	10
Other given operational conditions affecting environmental exposure	Continuous release	
	Number of emission days per year	365
	Emission or Release Factor: Water	100 %
Technical conditions and measures at process level to	Water	Any wastewater should be emitted to the STP

prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Soil	Sealing of all relevant soil surfaces in the facility
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Type of Sewage Treatment Plant	Onsite sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Dispose of empty containers and wastes safely.

2.2 Contributing scenario controlling worker exposure for: PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	solid
Frequency and duration of use	Frequency of use	220 days/year
	Covers daily exposures up to 8 hours	
Technical conditions and measures to control dispersion from source towards the worker	Provide local exhaust ventilation (LEV). (Efficiency: 90 %)	
Organisational measures to prevent /limit releases, dispersion and exposure	Monitoring measures are required to minimise emissions and resulting exposures during cleaning and maintenance activities or in the case of exceeding of occupational exposure limits	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable protective clothing. Use suitable eye protection and gloves. Materials recommended: Neoprene Use eye protection according to EN 166. Wash thoroughly after open handling of the product.	
	Manual spraying	Wear respiratory protection. (Efficiency: 90 %)(PROC11)

3. Exposure estimation and reference to its source

Environment

Relevant for all ERCs: EUSES

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
Relevant for all ERCs	---	Fresh water	PEC	0,0004mg/L	---
Relevant for all ERCs	---	Marine water	PEC	0,0004mg/L	---
Relevant for all ERCs	---	Sewage treatment plant (STP)	PEC	0,004mg/L	---

Workers

PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC8a	---	Dermal worker exposure	13,71mg/kg bw/day	---
PROC8b, PROC9	---	Dermal worker exposure	6,86mg/kg bw/day	---
PROC10	---	Dermal worker exposure	27,4mg/kg bw/day	---
PROC11	---	Dermal worker exposure	107mg/kg bw/day	---
PROC13	---	Dermal worker exposure	13,71mg/kg bw/day	---
PROC19	---	Dermal worker exposure	141mg/kg bw/day	---
PROC8a, PROC8b, PROC9, PROC19	---	Inhalation worker exposure	0,5mg/m³	---
PROC10, PROC19	Aqueous form, (12% w/w)	Inhalation worker exposure	1,24mg/m³	---
PROC11	Aqueous form	Inhalation worker exposure	1,35mg/m³	---
PROC13	Aqueous form	Inhalation worker exposure	1,34mg/m³	---

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 4: Consumer use		
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC8: Biocidal products (e.g. Disinfectants, pest control) PC35: Washing and cleaning products PC36: Water softeners PC37: Water treatment chemicals PC39: Cosmetics, personal care products	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems	
Activity	Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation, Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered	
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b		
Amount used	Annual amount for wide disperse uses	50 ton(s)/year
Environment factors not influenced by risk management	Dilution Factor (River)	10
Other given operational conditions affecting environmental exposure	Number of emission days per year	365
	Emission or Release Factor: Water	100 %
Technical conditions and measures at process level to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Any wastewater should be emitted to the STP
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Dispose of empty containers and wastes safely., Dispose of waste in accordance with environmental legislation.
2.2 Contributing scenario controlling consumer exposure for: PC35: Machine wash		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of	solid

	use)	
Amount used	Amount used per event	290 g(PC35Machine wash)
Frequency and duration of use	Exposure duration per event	1 min(Loading PC35)
	Exposure duration per event	20 min(Application PC35)
	Frequency of use	3 Times per day
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep away from children. Wash hands thoroughly after handling. Avoid contact with eyes. Use suitable eye protection. Keep away from food, drink and animal feedingstuffs.

2.3 Contributing scenario controlling consumer exposure for: PC35

Activity	Other bleaching	
Product characteristics	Physical Form (at time of use)	solid
Amount used	Amount used per event	70 g
Frequency and duration of use	Exposure duration per event	10 min
	Frequency of use	1 Times per day
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Keep away from children. Wash hands thoroughly after handling. Avoid contact with eyes. Use suitable eye protection. Keep away from food, drink and animal feedingstuffs.

3. Exposure estimation and reference to its source

Environment

Relevant for all ERCs: EUSES

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
Relevant for all ERCs	---	Fresh water	---	0,0004mg/L	---
Relevant for all ERCs	---	Marine water	---	0,0004mg/L	---
Relevant for all	---	Sewage treatment	---	0,004mg/L	---

ERCs		plant (STP)			

Consumers

PC35: EU TGD

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC35	Relevant for machine wash, Material transfers	Consumer dermal exposure	0,19mg/cm²	---
PC35	Hand wash	Consumer dermal exposure	0,08mg/cm²	---
PC35	Laundry bleaching/pre-treatment, Material transfers	Consumer dermal exposure	0,75mg/cm²	---

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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