



Sun Professional All in 1 Eco Tablets

Revision: 2019-07-17

Version: 05.0

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

1.1 Product identifier

Trade name: Sun Professional All in 1 Eco Tablets
Sun is a registered trade mark and is used under licence of Unilever

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

Identified uses:
AISE-P202 - Dishwash product. Automatic process
AISE-C6 - Machine dishwashing (powder, liquid, tablet) for consumer use
Uses advised against: Uses other than those identified are not recommended

1.3 Details of the supplier of the safety data sheet

Diversey Europe Operations BV, Maarssebroeksedijk 2, 3542DN Utrecht, The Netherlands

Contact details

Diversey Hygiene Sales Limited
Jamestown Road, Finglas, Dublin 11, Ireland
Tel: 01 8081808 (9am - 5pm Mon-Fri)
Email: dublin.orders@diversev.com

1.4 Emergency telephone number

Seek medical advice (show the label or safety data sheet where possible)
National Poisons Information Centre
Tel: 01 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)
Tel: 01 809 2566 (health care professionals)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Eye Irrit. 2 (H319)

2.2 Label elements



Signal word: Warning.

Contains subtilisin (Subtilisin)

Hazard statements:

H319 - Causes serious eye irritation.
EUH208 - May produce an allergic reaction.

Precautionary statements:

P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
Do not mix with other products.

2.3 Other hazards

No other hazards known. The product does not meet the criteria for PBT or vPvB in accordance with Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Ingredient(s)	EC number	CAS number	REACH number	Classification	Notes	Weight
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					percent
Trisodium citrate dihydrate		6132-04-3	01-2119457027-40	Eye Irrit. 2 (H319)	30-50
sodium carbonate	207-838-8	497-19-8	01-2119485498-19	Eye Irrit. 2 (H319)	20-30
sodium percarbonate	239-707-6	15630-89-4	01-2119457268-30	Ox. Sol. 2 (H272) Acute Tox. 4 (H302) Eye Dam. 1 (H318)	10-20
sodium silicate	215-687-4	1344-09-8	01-2119448725-31	STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	1-3
subtilisin	232-752-2	9014-01-1	01-2119480434-38	Acute Tox. 4 (H302) STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)	0.1-1

Workplace exposure limit(s), if available, are listed in subsection 8.1.

[1] Exempted: ionic mixture. See Regulation (EC) No 1907/2006, Annex V, paragraph 3 and 4. This salt is potentially present, based on calculation, and included for classification and labelling purposes only. Each starting material of the ionic mixture is registered, as required.

[2] Exempted: included in Annex IV of Regulation (EC) No 1907/2006.

[3] Exempted: Annex V of Regulation (EC) No 1907/2006.

[4] Exempted: polymer. See Article 2(9) of Regulation (EC) No 1907/2006.

For the full text of the H and EUH phrases mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation:	Get medical attention or advice if you feel unwell.
Skin contact:	Wash skin with plenty of lukewarm, gently flowing water. If skin irritation occurs: Get medical advice or attention.
Eye contact:	Hold eyelids apart and flush eyes with plenty of lukewarm water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation occurs and persists, get medical attention.
Ingestion:	Rinse mouth. Immediately drink 1 glass of water. Never give anything by mouth to an unconscious person. Get medical attention or advice if you feel unwell.
Self-protection of first aider:	Consider personal protective equipment as indicated in subsection 8.2.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation:	No known effects or symptoms in normal use.
Skin contact:	No known effects or symptoms in normal use.
Eye contact:	Causes severe irritation.
Ingestion:	No known effects or symptoms in normal use.

4.3 Indication of any immediate medical attention and special treatment needed

No information available on clinical testing and medical monitoring. Specific toxicological information on substances, if available, can be found in section 11.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Carbon dioxide. Dry powder. Water spray jet. Fight larger fires with water spray jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture

No special hazards known.

5.3 Advice for firefighters

As in any fire, wear self contained breathing apparatus and suitable protective clothing including gloves and eye/face protection.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

No special measures required.

6.2 Environmental precautions

Do not allow to enter drainage system, surface or ground water.

6.3 Methods and material for containment and cleaning up

Collect mechanically.

6.4 Reference to other sections

For personal protective equipment see subsection 8.2. For disposal considerations see section 13.

SECTION 7: Handling and storage

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7.1 Precautions for safe handling**Measures to prevent fire and explosions:**

No special precautions required.

Measures required to protect the environment:

For environmental exposure controls see subsection 8.2.

Advices on general occupational hygiene:

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Keep out of reach of children. Do not mix with other products unless advised by Diversey. Wash hands before breaks and at the end of workday. Wash face, hands and any exposed skin thoroughly after handling. Use only with adequate ventilation. See chapter 8.2, Exposure controls / Personal protection.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local and national regulations. Store in a closed container. Keep only in original packaging. Keep out of reach of children.

For conditions to avoid see subsection 10.4. For incompatible materials see subsection 10.5.

7.3 Specific end use(s)

No specific advice for end use available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Workplace exposure limits**

Air limit values, if available:

Ingredient(s)	Long term value(s)	Short term value(s)
subtilisin	0.00006 mg/m ³	0.00006 mg/m ³

Biological limit values, if available:

Recommended monitoring procedures, if available:

Additional exposure limits under the conditions of use, if available:

DNEL/DMEL and PNEC values**Human exposure**

DNEL oral exposure - Consumer (mg/kg bw)

Ingredient(s)	Short term - Local effects	Short term - Systemic effects	Long term - Local effects	Long term - Systemic effects
Trisodium citrate dihydrate	No data available	No data available	No data available	No data available
sodium carbonate	-	-	-	-
sodium percarbonate	-	-	-	-
sodium silicate	-	-	-	0.8
subtilisin	-	-	-	-

DNEL dermal exposure - Worker

Ingredient(s)	Short term - Local effects	Short term - Systemic effects (mg/kg bw)	Long term - Local effects	Long term - Systemic effects (mg/kg bw)
Trisodium citrate dihydrate	No data available	No data available	No data available	No data available
sodium carbonate	-	-	No data available	-
sodium percarbonate	12.8 mg/cm ² skin	-	12.8 mg/cm ² skin	-
sodium silicate	No data available	-	No data available	1.59
subtilisin	0.2 %	-	-	-

DNEL dermal exposure - Consumer

Ingredient(s)	Short term - Local effects	Short term - Systemic effects (mg/kg bw)	Long term - Local effects	Long term - Systemic effects (mg/kg bw)
Trisodium citrate dihydrate	No data available	No data available	No data available	No data available
sodium carbonate	No data available	-	No data available	-
sodium percarbonate	6.4 mg/cm ² skin	-	6.4 mg/cm ² skin	-
sodium silicate	No data available	-	No data available	0.8
subtilisin	0.2 %	-	-	-

DNEL inhalatory exposure - Worker (mg/m³)

Ingredient(s)	Short term - Local effects	Short term - Systemic effects	Long term - Local effects	Long term - Systemic effects
Trisodium citrate dihydrate	No data available	No data available	No data available	No data available
sodium carbonate	-	-	10	-
sodium percarbonate	-	-	5	-
sodium silicate	-	-	-	5.61

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subtilisin	-	-	0.00006 (DMEL)	-
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DNEL inhalatory exposure - Consumer (mg/m³)

Ingredient(s)	Short term - Local effects	Short term - Systemic effects	Long term - Local effects	Long term - Systemic effects
Trisodium citrate dihydrate	No data available	No data available	No data available	No data available
sodium carbonate	10	-	-	-
sodium percarbonate	-	-	-	-
sodium silicate	-	-	-	1.38
subtilisin	-	-	0.000015 (DMEL)	-

Environmental exposure

Environmental exposure - PNEC

Ingredient(s)	Surface water, fresh (mg/l)	Surface water, marine (mg/l)	Intermittent (mg/l)	Sewage treatment plant (mg/l)
Trisodium citrate dihydrate	No data available	No data available	No data available	No data available
sodium carbonate	-	-	-	-
sodium percarbonate	0.035	0.035	0.035	16.24
sodium silicate	7.5	1	7.5	348
subtilisin	0.00006	0.000006	-	65

Environmental exposure - PNEC, continued

Ingredient(s)	Sediment, freshwater (mg/kg)	Sediment, marine (mg/kg)	Soil (mg/kg)	Air (mg/m ³)
Trisodium citrate dihydrate	No data available	No data available	No data available	No data available
sodium carbonate	-	-	-	-
sodium percarbonate	-	-	-	-
sodium silicate	-	-	-	-
subtilisin	-	-	-	-

8.2 Exposure controls

The following information applies for the uses indicated in subsection 1.2 of the Safety Data Sheet. If available, please refer to the product information sheet for application and handling instructions. Normal use conditions are assumed for this section.

Recommended safety measures for handling the undiluted product:

Covering activities such as filling and transfer of product to application equipment, flasks or buckets

Appropriate engineering controls: No special requirements under normal use conditions.
Appropriate organisational controls: Avoid direct contact and/or splashes where possible. Train personnel.

Personal protective equipment

Eye / face protection: No special requirements under normal use conditions.
Hand protection: No special requirements under normal use conditions.
Body protection: No special requirements under normal use conditions.
Respiratory protection: No special requirements under normal use conditions.

Environmental exposure controls: No special requirements under normal use conditions.

Recommended safety measures for handling the diluted product:

Recommended maximum concentration (%): 0.1

Appropriate engineering controls: No special requirements under normal use conditions.
Appropriate organisational controls: No special requirements under normal use conditions.

Personal protective equipment

Eye / face protection: No special requirements under normal use conditions.
Hand protection: No special requirements under normal use conditions.
Body protection: No special requirements under normal use conditions.
Respiratory protection: No special requirements under normal use conditions.

Environmental exposure controls: No special requirements under normal use conditions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Information in this section refers to the product, unless it is specifically stated that substance data is listed

Method / remark

Physical State: Solid
Appearance: Tablets

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Colour: Specks from White to Blue

Odour: Product specific

Odour threshold: Not applicable

pH: Not applicable.

Melting point/freezing point (°C): Not determined

OECD 102

Initial boiling point and boiling range (°C): 2000

Substance data, boiling point

Ingredient(s)	Value (°C)	Method	Atmospheric pressure (hPa)
Trisodium citrate dihydrate	No data available		
sodium carbonate	1600	Method not given	1013
sodium percarbonate	Product decomposes before boiling		
sodium silicate	> 100	Method not given	
subtilisin	No data available		

Method / remark

Flammability (liquid): Not applicable.

Flash point (°C): Not applicable.

Not relevant to classification of this product

Sustained combustion: Not applicable.

(UN Manual of Tests and Criteria, section 32, L.2)

Evaporation rate: Not relevant for classification of this product.

Flammability (solid, gas): Not determined

Upper/lower flammability limit (%): Not determined

See substance data

Substance data, flammability or explosive limits, if available:

Ingredient(s)	Lower limit (% vol)	Upper limit (% vol)
subtilisin	-	-

Method / remark

Vapour pressure: Not determined

See substance data

Substance data, vapour pressure

Ingredient(s)	Value (Pa)	Method	Temperature (°C)
Trisodium citrate dihydrate	No data available		
sodium carbonate	Negligible		
sodium percarbonate	Negligible		
sodium silicate	No data available		
subtilisin	Not applicable		

Method / remark

Vapour density: Not determined

Relative density: ≈ 0.3 (20 °C)

Solubility in / Miscibility with Water: Soluble

Not relevant to classification of this product

OECD 109 (EU A.3)

Substance data, solubility in water

Ingredient(s)	Value (g/l)	Method	Temperature (°C)
Trisodium citrate dihydrate	No data available		
sodium carbonate	210-215	Method not given	20
sodium percarbonate	140	Method not given	20
sodium silicate	Soluble	Method not given	20
subtilisin	No data available		

Substance data, partition coefficient n-octanol/water (log Kow): see subsection 12.3

Method / remark

Autoignition temperature: Not determined

Decomposition temperature: Not applicable.

Viscosity: Not determined

Explosive properties: Not explosive.

Oxidising properties: Not oxidising.

Not applicable to solids or gases

Not oxidising, based on substance properties

9.2 Other information

Surface tension (N/m): Not determined

Corrosion to metals: Not corrosive

OECD 115

Not applicable to solids or gases

Substance data, dissociation constant, if available:

Ingredient(s)	Value	Method	Temperature (°C)
sodium silicate	9.9 - 12 (pKa)	Method not given	

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

No reactivity hazards known under normal storage and use conditions.

10.2 Chemical stability

Stable under normal storage and use conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known under normal storage and use conditions.

10.4 Conditions to avoid

None known under normal storage and use conditions.

10.5 Incompatible materials

None known under normal use conditions.

10.6 Hazardous decomposition products

None known under normal storage and use conditions.

SECTION 11: Toxicological information**11.1 Information on toxicological effects**

Mixture data:

Relevant calculated ATE(s):

ATE - Oral (mg/kg): >2000

Eye irritation and corrosivity

Result: Eye irritant 2

Method: Weight of evidence

Substance data, where relevant and available, are listed below:

Acute toxicity

Acute oral toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
Trisodium citrate dihydrate		No data available			
sodium carbonate	LD ₅₀	2800	Rat	Method not given	
sodium percarbonate	LD ₅₀	1034	Rat	Method not given	
sodium silicate	LD ₅₀	3400	Rat	Method not given	
subtilisin	LD ₅₀	1800	Rat	OECD 401 (EU B.1)	

Acute dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
Trisodium citrate dihydrate		No data available			
sodium carbonate	LD ₅₀	> 2000	Rabbit	Method not given	
sodium percarbonate	LD ₅₀	> 2000	Rabbit	OECD 402 (EU B.3)	
sodium silicate	LD ₅₀	> 5000	Rat	Method not given	
subtilisin		No data available			

Acute inhalative toxicity

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
Trisodium citrate dihydrate		No data available			
sodium carbonate	LC ₅₀	> 2.3 (dust)		Weight of evidence	2
sodium percarbonate		No data available			
sodium silicate	LC ₅₀	> 2.06	Rat	Method not given	
subtilisin		-		Weight of evidence	

Irritation and corrosivity

Skin irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
Trisodium citrate dihydrate	No data available			

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sodium carbonate	Not irritant	Rabbit	OECD 404 (EU B.4)	
sodium percarbonate	Not irritant	Rabbit	Method not given	
sodium silicate	Irritant		Method not given	
subtilisin	Mild irritant	Rabbit	OECD 404 (EU B.4)	

Eye irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
Trisodium citrate dihydrate	No data available			
sodium carbonate	Irritant	Rabbit	Method not given	
sodium percarbonate	Severe damage	Rabbit	EPA OPP 81-4	
sodium silicate	Irritant		Method not given	
subtilisin	Not corrosive or irritant	Rabbit	OECD 405 (EU B.5)	

Respiratory tract irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
Trisodium citrate dihydrate	No data available			
sodium carbonate	No data available			
sodium percarbonate	Irritating to respiratory tract	Mouse	Method not given	
sodium silicate	Irritating to respiratory tract		Method not given	
subtilisin	Irritating to respiratory tract			

Sensitisation

Sensitisation by skin contact

Ingredient(s)	Result	Species	Method	Exposure time (h)
Trisodium citrate dihydrate	No data available			
sodium carbonate	Not sensitising		Method not given	
sodium percarbonate	Not sensitising	Guinea pig	OECD 406 (EU B.6) / Buehler test	
sodium silicate	Not sensitising		Method not given	
subtilisin	No data available			

Sensitisation by inhalation

Ingredient(s)	Result	Species	Method	Exposure time
Trisodium citrate dihydrate	No data available			
sodium carbonate	No data available			
sodium percarbonate	No data available			
sodium silicate	No data available			
subtilisin	Sensitising		Weight of evidence	

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Mutagenicity

Ingredient(s)	Result (in-vitro)	Method (in-vitro)	Result (in-vivo)	Method (in-vivo)
Trisodium citrate dihydrate	No data available		No data available	
sodium carbonate	No data available		No data available	
sodium percarbonate	No data available		No data available	
sodium silicate	No evidence for mutagenicity, negative test results		No data available	
subtilisin	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) OECD 473 OECD 476 (Chinese Hamster Ovary)	No data available	

Carcinogenicity

Ingredient(s)	Effect
Trisodium citrate dihydrate	No data available
sodium carbonate	No evidence for carcinogenicity, weight-of-evidence
sodium percarbonate	No data available
sodium silicate	No evidence for carcinogenicity, negative test results
subtilisin	No data available

Toxicity for reproduction

Ingredient(s)	Endpoint	Specific effect	Value (mg/kg bw/d)	Species	Method	Exposure time	Remarks and other effects reported
Trisodium citrate dihydrate			No data available				

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sodium carbonate			No data available				
sodium percarbonate			No data available				
sodium silicate			No data available				No evidence for reproductive toxicity
subtilisin			No data available				

Repeated dose toxicity

Sub-acute or sub-chronic oral toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
Trisodium citrate dihydrate		No data available				
sodium carbonate		No data available				
sodium percarbonate		No data available				
sodium silicate	NOAEL	> 159	Rat	Method not given		
subtilisin		No data available				

Sub-chronic dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
Trisodium citrate dihydrate		No data available				
sodium carbonate		No data available				
sodium percarbonate		No data available				
sodium silicate		No data available				
subtilisin		No data available				

Sub-chronic inhalation toxicity

Ingredient(s)	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time (days)	Specific effects and organs affected
Trisodium citrate dihydrate		No data available				
sodium carbonate		No data available				
sodium percarbonate		No data available				
sodium silicate		No data available				
subtilisin		No data available				

Chronic toxicity

Ingredient(s)	Exposure route	Endpoint	Value (mg/kg bw/d)	Species	Method	Exposure time	Specific effects and organs affected	Remark
Trisodium citrate dihydrate			No data available					
sodium carbonate			No data available					
sodium percarbonate			No data available					
sodium silicate			No data available					
subtilisin			No data available					

STOT-single exposure

Ingredient(s)	Affected organ(s)
Trisodium citrate dihydrate	No data available
sodium carbonate	No data available
sodium percarbonate	No data available
sodium silicate	No data available
subtilisin	Respiratory tract

STOT-repeated exposure

Ingredient(s)	Affected organ(s)
Trisodium citrate dihydrate	No data available
sodium carbonate	No data available
sodium percarbonate	No data available
sodium silicate	No data available

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subtilisin	No data available

Aspiration hazard

Substances with an aspiration hazard (H304), if any, are listed in section 3. If relevant, see section 9 for dynamic viscosity and relative density of the product.

Potential adverse health effects and symptoms

Effects and symptoms related to the product, if any, are listed in subsection 4.2.

SECTION 12: Ecological information**12.1 Toxicity**

No data is available on the mixture.

Substance data, where relevant and available, are listed below:

Aquatic short-term toxicity

Aquatic short-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
Trisodium citrate dihydrate		No data available			
sodium carbonate	LC ₅₀	300	<i>Lepomis macrochirus</i>	Method not given	96
sodium percarbonate	LC ₅₀	70.7	<i>Pimephales promelas</i>	Method not given	96
sodium silicate	LC ₅₀	260 - 310	<i>Oncorhynchus mykiss</i>	Method not given	96
subtilisin	LC ₅₀	8.2	<i>Fish</i>	OECD 203 (EU C.1)	96

Aquatic short-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
Trisodium citrate dihydrate		No data available			
sodium carbonate	EC ₅₀	265	<i>Daphnia magna Straus</i>	Method not given	96
sodium percarbonate	EC ₅₀	4.9	<i>Daphnia pulex</i>	Method not given	48
sodium silicate	EC ₅₀	1700	<i>Daphnia magna Straus</i>	Method not given	48
subtilisin	EC ₅₀	0.586	<i>Daphnia</i>	OECD 202 (EU C.2)	48

Aquatic short-term toxicity - algae

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
Trisodium citrate dihydrate		No data available			
sodium carbonate		No data available			-
sodium percarbonate		No data available			-
sodium silicate	EC ₅₀	207	<i>Desmodesmus subspicatus</i>	Method not given	72
subtilisin	E _r C ₅₀	0.830	<i>Not specified</i>	OECD 201 (EU C.3)	72

Aquatic short-term toxicity - marine species

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (days)
Trisodium citrate dihydrate		No data available			
sodium carbonate		No data available			-
sodium percarbonate		No data available			-
sodium silicate		No data available			-
subtilisin		No data available			-

Impact on sewage plants - toxicity to bacteria

Ingredient(s)	Endpoint	Value (mg/l)	Inoculum	Method	Exposure time
Trisodium citrate dihydrate		No data available			
sodium carbonate		No data available			

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sodium percarbonate	EC ₅₀	466	Activated sludge	OECD 209	0.5 hour(s)
sodium silicate		No data available			
subtilisin		No data available			

Aquatic long-term toxicity

Aquatic long-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
Trisodium citrate dihydrate		No data available				
sodium carbonate		No data available				
sodium percarbonate	NOEC	7.4	<i>Pimephales promelas</i>	Method not given	96 hour(s)	
sodium silicate	NOEC	348	<i>Brachydanio rerio</i>	Method not given	96 hour(s)	
subtilisin		No data available				

Aquatic long-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
Trisodium citrate dihydrate		No data available				
sodium carbonate		No data available				
sodium percarbonate	NOEC	2	<i>Daphnia pulex</i>	Method not given	48 hour(s)	
sodium silicate		No data available				
subtilisin		No data available				

Aquatic toxicity to other aquatic benthic organisms, including sediment-dwelling organisms, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw sediment)	Species	Method	Exposure time (days)	Effects observed
Trisodium citrate dihydrate		No data available				
sodium carbonate		No data available			-	
sodium percarbonate		No data available			-	
sodium silicate		No data available			-	
subtilisin		No data available			-	

Terrestrial toxicity

Terrestrial toxicity - soil invertebrates, including earthworms, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
sodium carbonate		No data available			-	
sodium percarbonate		No data available			-	
sodium silicate		No data available			-	
subtilisin		No data available			-	

Terrestrial toxicity - plants, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
sodium carbonate		No data available			-	
sodium percarbonate		No data available			-	
sodium silicate		No data available			-	
subtilisin		No data available			-	

Terrestrial toxicity - birds, if available:

Ingredient(s)	Endpoint	Value	Species	Method	Exposure time (days)	Effects observed
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sodium carbonate		No data available			-	
sodium percarbonate		No data available			-	
sodium silicate		No data available			-	
subtilisin		No data available			-	

Terrestrial toxicity - beneficial insects, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
sodium carbonate		No data available			-	
sodium percarbonate		No data available			-	
sodium silicate		No data available			-	
subtilisin		No data available			-	

Terrestrial toxicity - soil bacteria, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
sodium carbonate		No data available			-	
sodium percarbonate		No data available			-	
sodium silicate		No data available			-	
subtilisin		No data available			-	

12.2 Persistence and degradability**Abiotic degradation**

Abiotic degradation - photodegradation in air, if available:

Ingredient(s)	Half-life time	Method	Evaluation	Remark
sodium percarbonate	NA	Method not given		

Abiotic degradation - hydrolysis, if available:

Ingredient(s)	Half-life time in fresh water	Method	Evaluation	Remark
sodium carbonate	No data available		Rapidly hydrolysible	
sodium percarbonate	< 1 day(s)	Method not given	Hydrolysible	

Abiotic degradation - other processes, if available:

Biodegradation

Ready biodegradability - aerobic conditions

Ingredient(s)	Inoculum	Analytical method	DT ₅₀	Method	Evaluation
Trisodium citrate dihydrate				Weight of evidence	Not readily biodegradable.
sodium carbonate					Not applicable (inorganic substance)
sodium percarbonate					Not applicable (inorganic substance)
sodium silicate					Not applicable (inorganic substance)
subtilisin				OECD 301B	Readily biodegradable

Ready biodegradability - anaerobic and marine conditions, if available:

Degradation in relevant environmental compartments, if available:

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Ingredient(s)	Value	Method	Evaluation	Remark
Trisodium citrate dihydrate	No data available			
sodium carbonate	No data available		No bioaccumulation expected	
sodium percarbonate	No data available			
sodium silicate	No data available		Low potential for bioaccumulation	
subtilisin	< 0			

Bioconcentration factor (BCF)

Ingredient(s)	Value	Species	Method	Evaluation	Remark
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Trisodium citrate dihydrate	No data available				
sodium carbonate	No data available			No bioaccumulation expected	
sodium percarbonate	No data available				
sodium silicate	No data available				
subtilisin	-			Not relevant, does not bioaccumulate	

12.4 Mobility in soil

Adsorption/Desorption to soil or sediment

Ingredient(s)	Adsorption coefficient Log Koc	Desorption coefficient Log Koc(des)	Method	Soil/sediment type	Evaluation
Trisodium citrate dihydrate	No data available				
sodium carbonate	No data available				Potential for mobility in soil, soluble in water
sodium percarbonate	No data available				High potential for mobility in soil
sodium silicate	No data available				
subtilisin	No data available				

12.5 Results of PBT and vPvB assessment

Substances that fulfill the criteria for PBT/vPvB, if any, are listed in section 3.

12.6 Other adverse effects

No other adverse effects known.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Waste from residues / unused products:**

The concentrated contents or contaminated packaging should be disposed of by a certified handler or according to the site permit. Release of waste to sewers is discouraged. The cleaned packaging material is suitable for energy recovery or recycling in line with local legislation.
20 01 29* - detergents containing dangerous substances.

European Waste Catalogue:**Empty packaging****Recommendation:**

Dispose of observing national or local regulations.

SECTION 14: Transport information**Land transport (ADR/RID), Sea transport (IMDG), Air transport (ICAO-TI / IATA-DGR)****14.1 UN number:** Non-dangerous goods**14.2 UN proper shipping name:** Non-dangerous goods**14.3 Transport hazard class(es):** Non-dangerous goods**14.4 Packing group:** Non-dangerous goods**14.5 Environmental hazards:** Non-dangerous goods**14.6 Special precautions for user:** Non-dangerous goods**14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code:** Non-dangerous goods**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations:**

- Regulation (EC) No. 1907/2006 - REACH
- Regulation (EC) No 1272/2008 - CLP
- Regulation (EC) No. 648/2004 - Detergents regulation
- Regulation (EC) No 66/2010 on the EU Ecolabel

Authorisations or restrictions (Regulation (EC) No 1907/2006, Title VII respectively Title VIII): Not applicable.

UFI: GKY0-Y09C-N002-5WWR

Ingredients according to EC Detergents Regulation 648/2004

oxygen-based bleaching agents

5 - 15 %

polycarboxylates, non-ionic surfactants

< 5 %

enzymes

The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

15.2 Chemical safety assessment

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A chemical safety assessment has not been carried out on the mixture

SECTION 16: Other information

The information in this document is based on our best present knowledge. However, it does not constitute a guarantee for any specific product features and does not establish a legally binding contract

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Classification procedure

The classification of the mixture is in general based on calculation methods using substance data, as required by Regulation (EC) No 1272/2008. If for certain classifications data on the mixture is available or for example bridging principles or weight of evidence can be used for classification, this will be indicated in the relevant sections of the Safety Data Sheet. See section 9 for physical chemical properties, section 11 for toxicological information and section 12 for ecological information.

Full text of the H and EUH phrases mentioned in section 3:

- H272 - May intensify fire; oxidiser.
- H302 - Harmful if swallowed.
- H303 - May be harmful if swallowed.
- H315 - Causes skin irritation.
- H318 - Causes serious eye damage.
- H319 - Causes serious eye irritation.
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 - May cause respiratory irritation.
- H400 - Very toxic to aquatic life.
- H411 - Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms:

- AISE - The international Association for Soaps, Detergents and Maintenance Products
- DNEL - Derived No Effect Limit
- EUH - CLP Specific hazard statement
- PBT - Persistent, Bioaccumulative and Toxic
- PNEC - Predicted No Effect Concentration
- REACH number - REACH registration number, without supplier specific part
- vPvB - very Persistent and very Bioaccumulative
- ATE - Acute Toxicity Estimate
- LD50 - Lethal Dose, 50% / Median Lethal dose
- LC50 - Lethal Concentration, 50% / Median Lethal Concentration
- EC50 - effective concentration, 50%
- NOEL - No observed effect level
- NOAEL - No observed adverse effect level
- OECD - Organization for Economic Cooperation and Development

End of Safety Data Sheet