

## Sun Professional Tablets

Revision: 2016-05-29

Version: 14.0

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

#### 1.1 Product identifier

**Trade name:** Sun Professional 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-P203 - Dishwash product. Semi-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, Maarssenbroeksedijk 2, 3542DN Utrecht, The Netherlands

#### Contact details

Unilever Ireland, No.20 Riverwalk, National Digital Park, Citywest, Dublin 24

Tel: 1850 445555

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

#### 1.4 Emergency telephone number

Tel: 01 8081808 (9am - 5pm Mon-Fri)

After hours: National Poisons Centre, Beaumont Hospital, Dublin 9

Tel: 01 8379964

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Eye Irrit. 2 (H319)

#### Classification in accordance with Directive 1999/45/EC and corresponding national legislation

**Indication of danger**

Xi - Irritant

**Risk phrases:**

R41 - Risk of serious damage to eyes.

#### 2.2 Label elements



**Signal word:** Warning.

Contains EUH208: subtilisin (Subtilisin)

**Hazard statements:**

H319 - Causes serious eye irritation.

EUH208 - May produce an allergic reaction.

**Precautionary statements:**

P102 - Keep out of reach of children.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

## Sun Professional Tablets

Continue rinsing.  
P337 + P313 - If eye irritation persists: Get medical advice or attention.

**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	Classification (1999/45/EC)	Notes	Weight percent
sodium carbonate	207-838-8	497-19-8	01-2119485498-19	Eye Irrit. 2 (H319)	Xi;R36		30-50
sodium percarbonate	239-707-6	15630-89-4	01-2119457268-30	Ox. Sol. 2 (H272) Acute Tox. 4 (H302) Eye Dam. 1 (H318)	O;R8 Xn;R22 Xi;R41		10-20
disodium disilicate	215-687-4	1344-09-8	01-2119448725-31	STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Dam. 1 (H318)	Xi;R37/38-41		3-10
alkyl alcohol alkoxyolate	Polymer	103818-93-5	No data available	Skin Irrit. 2 (H315)	Xi;R38		1-3
tetrasodium (1-hydroxy ethylidene)bisphosphonate	223-267-7	3794-83-0	No data available	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	Xn;R22 Xi;R36/38		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)	Xi;R37/38-41 Xn;R42		0.1-1

\* Polymer.

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 R, H and EUH phrases mentioned in this Section, see Section 16.

**SECTION 4: First aid measures****4.1 Description of first aid measures**

<b>Inhalation:</b>	Get medical attention or advice if you feel unwell.
<b>Skin contact:</b>	Wash skin with plenty of lukewarm, gently flowing water. If skin irritation occurs: Get medical advice or attention.
<b>Eye contact:</b>	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.
<b>Ingestion:</b>	Immediately drink 1 glass of water. Never give anything by mouth to an unconscious person. Get medical attention or advice if you feel unwell.
<b>Self-protection of first aider:</b>	Consider personal protective equipment as indicated in subsection 8.2.

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

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

## Sun Professional Tablets

**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****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 Sealed Air. Wash hands before breaks and at the end of workday. Wash face, hands and any exposed skin thoroughly after handling. Take off immediately all contaminated clothing. Use personal protective equipment as required. Use only with adequate ventilation.

**7.2 Conditions for safe storage, including any incompatibilities**

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

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 <sup>3</sup>	0.00006 mg/m <sup>3</sup>

Biological limit values, 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
sodium carbonate	-	-	-	-
sodium percarbonate	-	-	-	-
disodium disilicate	-	-	-	0.8
alkyl alcohol alkoxylate	No data available	No data available	No data available	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available	No data available	No data available	No data available
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)
sodium carbonate	No data available	-	No data available	-
sodium percarbonate	12.8 mg/cm <sup>2</sup> skin	-	12.8 mg/cm <sup>2</sup> skin	-
disodium disilicate	No data available	-	No data available	1.59
alkyl alcohol alkoxylate	No data available	No data available	No data available	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available	No data available	No data available	No data available
subtilisin	0.2 %	-	-	-

## Sun Professional Tablets

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)
sodium carbonate	No data available	-	No data available	-
sodium percarbonate	6.4 mg/cm <sup>2</sup> skin	-	6.4 mg/cm <sup>2</sup> skin	-
disodium disilicate	No data available	-	No data available	0.8
alkyl alcohol alkoxylate	No data available	No data available	No data available	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available	No data available	No data available	No data available
subtilisin	0.2 %	-	-	-

DNEL inhalatory exposure - Worker (mg/m<sup>3</sup>)

Ingredient(s)	Short term - Local effects	Short term - Systemic effects	Long term - Local effects	Long term - Systemic effects
sodium carbonate	-	-	10	-
sodium percarbonate	-	-	5	-
disodium disilicate	-	-	-	5.61
alkyl alcohol alkoxylate	No data available	No data available	No data available	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available	No data available	No data available	No data available
subtilisin	-	-	60000 (DMEL)	-

DNEL inhalatory exposure - Consumer (mg/m<sup>3</sup>)

Ingredient(s)	Short term - Local effects	Short term - Systemic effects	Long term - Local effects	Long term - Systemic effects
sodium carbonate	10	-	-	-
sodium percarbonate	-	-	-	-
disodium disilicate	-	-	-	1.38
alkyl alcohol alkoxylate	No data available	No data available	No data available	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available	No data available	No data available	No data available
subtilisin	-	-	15000 (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)
sodium carbonate	-	-	-	-
sodium percarbonate	0.035	0.035	0.035	16.24
disodium disilicate	7.5	1	7.5	348
alkyl alcohol alkoxylate	No data available	No data available	No data available	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available	No data available	No data available	No data available
subtilisin	0.00006	0.00006	-	65

Environmental exposure - PNEC, continued

Ingredient(s)	Sediment, freshwater (mg/kg)	Sediment, marine (mg/kg)	Soil (mg/kg)	Air (mg/m <sup>3</sup> )
sodium carbonate	-	-	-	-
sodium percarbonate	-	-	-	-
disodium disilicate	-	-	-	-
alkyl alcohol alkoxylate	No data available	No data available	No data available	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available	No data available	No data available	No data available
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:

**Appropriate engineering controls:** The product is intended to be used in closed systems.  
**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.

## SECTION 9: Physical and chemical properties

## Sun Professional Tablets

## 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

**Physical State:** Solid  
**Appearance:** Tablets  
**Colour:** White  
**Odour:** Slightly perfumed  
**Odour threshold:** Not applicable  
**pH:**  
**Dilution pH:** ≈ 11 (10%)  
**Melting point/freezing point (°C):** Not determined  
**Initial boiling point and boiling range (°C):** Not determined

Method / remark

Substance data, boiling point

Ingredient(s)	Value (°C)	Method	Atmospheric pressure (hPa)
sodium carbonate	1600	Method not given	1013
sodium percarbonate	Product decomposes before boiling		
disodium disilicate	> 100	Method not given	
alkyl alcohol alkoxylate	No data available		
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available		
subtilisin	No data available		

Method / remark

**Flash point (°C):** Not applicable.  
**Sustained combustion:** Not applicable.  
**Evaporation rate:** Not determined  
**Flammability (solid, gas):** Not determined  
**Upper/lower flammability limit (%):** Not determined

Substance data, flammability or explosive limits, if available:

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

Method / remark

**Vapour pressure:** Not determined

Substance data, vapour pressure

Ingredient(s)	Value (Pa)	Method	Temperature (°C)
sodium carbonate	Negligible		
sodium percarbonate	Negligible		
disodium disilicate	No data available		
alkyl alcohol alkoxylate	No data available		
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available		
subtilisin	Not applicable		

Method / remark

**Vapour density:** Not determined  
**Relative density:** 1.05 g/cm<sup>3</sup> (20 °C)  
**Solubility in / Miscibility with Water:** Soluble

Substance data, solubility in water

Ingredient(s)	Value (g/l)	Method	Temperature (°C)
sodium carbonate	210-215	Method not given	20
sodium percarbonate	140	Method not given	20
disodium disilicate	Soluble	Method not given	20
alkyl alcohol alkoxylate	No data available		
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available		
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.

## Sun Professional Tablets

**Oxidising properties:** Not oxidising

### 9.2 Other information

**Surface tension (N/m):** Not determined

**Corrosion to metals:** Not applicable to solids or gases

Substance data, dissociation constant, if available:

Ingredient(s)	Value	Method	Temperature (°C)
disodium disilicate	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

Reacts with acids.

### 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): 2800

#### 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)
sodium carbonate	LD <sub>50</sub>	2800	Rat	Method not given	
sodium percarbonate	LD <sub>50</sub>	1034	Rat	Method not given	
disodium disilicate	LD <sub>50</sub>	3400	Rat	Method not given	
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available			
subtilisin	LD <sub>50</sub>	1800	Rat	OECD 401 (EU B.1)	

Acute dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)
sodium carbonate	LD <sub>50</sub>	> 2000	Rabbit	Method not given	
sodium percarbonate	LD <sub>50</sub>	> 2000	Rabbit	OECD 402 (EU B.3)	
disodium disilicate	LD <sub>50</sub>	> 5000	Rat	Method not given	
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available			
subtilisin		No data available			

Acute inhalative toxicity

## Sun Professional Tablets

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
sodium carbonate	LC <sub>50</sub>	2.3 (dust)	Rat	OECD 403 (EU B.2)	2
sodium percarbonate		No data available			
disodium disilicate		No mortality observed	Rat	Non guideline test	
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available			
subtilisin		-		Weight of evidence	

**Irritation and corrosivity**

Skin irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
sodium carbonate	Not irritant	Rabbit	Method not given	
sodium percarbonate	Not irritant	Rabbit	Method not given	
disodium disilicate	Irritant		Method not given	
alkyl alcohol alkoxylate	No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available			
subtilisin	Mild irritant	Rabbit	OECD 404 (EU B.4)	

Eye irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
sodium carbonate	Irritant	Rabbit	Method not given	
sodium percarbonate	Severe damage	Rabbit	EPA OPP 81-4	
disodium disilicate	Severe damage		Method not given	
alkyl alcohol alkoxylate	No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available			
subtilisin	Irritant	Rabbit	OECD 405 (EU B.5)	

Respiratory tract irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
sodium carbonate	No data available			
sodium percarbonate	Irritating to respiratory tract	Mouse	Method not given	
disodium disilicate	Irritating to respiratory tract		Method not given	
alkyl alcohol alkoxylate	No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available			
subtilisin	No data available			

**Sensitisation**

Sensitisation by skin contact

Ingredient(s)	Result	Species	Method	Exposure time (h)
sodium carbonate	Not sensitising		Method not given	
sodium percarbonate	Not sensitising	Guinea pig	OECD 406 (EU B.6) / Buehler test	
disodium disilicate	Not sensitising		Method not given	
alkyl alcohol alkoxylate	No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available			
subtilisin	No data available			

Sensitisation by inhalation

Ingredient(s)	Result	Species	Method	Exposure time
sodium carbonate	No data available			
sodium percarbonate	No data available			
disodium disilicate	No data available			
alkyl alcohol alkoxylate	No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate	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)
sodium carbonate	No data available		No data available	
sodium percarbonate	No data available		No data available	
disodium disilicate	No evidence for mutagenicity, negative test results		No data available	

## Sun Professional Tablets

alkyl alcohol alkoxylate	No data available		No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available		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
sodium carbonate	No evidence for carcinogenicity, weight-of-evidence
sodium percarbonate	No data available
disodium disilicate	No evidence for carcinogenicity, negative test results
alkyl alcohol alkoxylate	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available
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
sodium carbonate			No data available				
sodium percarbonate			No data available				
disodium disilicate			No data available				No evidence for reproductive toxicity
alkyl alcohol alkoxylate			No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate			No data available				
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
sodium carbonate		No data available				
sodium percarbonate		No data available				
disodium disilicate	NOAEL	> 159	Rat	Method not given	180	No effects observed
alkyl alcohol alkoxylate		No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available				
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
sodium carbonate		No data available				
sodium percarbonate		No data available				
disodium disilicate		No data available				
alkyl alcohol alkoxylate		No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate		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
sodium carbonate		No data available				
sodium percarbonate		No data available				
disodium disilicate		No data available				
alkyl alcohol alkoxylate		No data available				



## Sun Professional Tablets

tetrasodium (1-hydroxy ethylidene)bisphosphonate		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
sodium carbonate			No data available					
sodium percarbonate			No data available					
disodium disilicate			No data available					
alkyl alcohol alkoxylate			No data available					
tetrasodium (1-hydroxy ethylidene)bisphosphonate			No data available					
subtilisin			No data available					

## STOT-single exposure

Ingredient(s)	Affected organ(s)
sodium carbonate	No data available
sodium percarbonate	No data available
disodium disilicate	No data available
alkyl alcohol alkoxylate	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available
subtilisin	No data available

## STOT-repeated exposure

Ingredient(s)	Affected organ(s)
sodium carbonate	No data available
sodium percarbonate	No data available
disodium disilicate	Not applicable
alkyl alcohol alkoxylate	No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available
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)
sodium carbonate	LC <sub>50</sub>	300	<i>Lepomis macrochirus</i>	Method not given	96
sodium percarbonate	LC <sub>50</sub>	70.7	<i>Pimephales promelas</i>	Method not given	96
disodium disilicate	LC <sub>50</sub>	260 - 310	<i>Oncorhynchus mykiss</i>	Method not given	96
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available			
subtilisin	LC <sub>50</sub>	8.2	<i>Fish</i>	OECD 203	96

Aquatic short-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
sodium carbonate	EC <sub>50</sub>	265	<i>Daphnia magna</i> Straus	Method not given	96
sodium percarbonate	EC <sub>50</sub>	4.9	<i>Daphnia pulex</i>	Method not given	48

## Sun Professional Tablets

disodium disilicate	EC <sub>50</sub>	1700	<i>Daphnia magna Straus</i>	Method not given	48
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available			
subtilisin	EC <sub>50</sub>	0.586	<i>Daphnia</i>	OECD 202	48

## Aquatic short-term toxicity - algae

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
sodium carbonate		No data available			-
sodium percarbonate		No data available			-
disodium disilicate	EC <sub>50</sub>	207	<i>Desmodesmus subspicatus</i>	Method not given	72
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available			
subtilisin	E <sub>r</sub> C <sub>50</sub>	0.830	<i>Not specified</i>	OECD 201	72

## Aquatic short-term toxicity - marine species

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (days)
sodium carbonate		No data available			-
sodium percarbonate		No data available			-
disodium disilicate		No data available			-
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available			
subtilisin		No data available			-

## Impact on sewage plants - toxicity to bacteria

Ingredient(s)	Endpoint	Value (mg/l)	Inoculum	Method	Exposure time
sodium carbonate		No data available			
sodium percarbonate	EC <sub>50</sub>	466	<i>Activated sludge</i>	OECD 209	0.5 hour(s)
disodium disilicate		No data available			
alkyl alcohol alkoxylate		No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate		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
sodium carbonate		No data available				
sodium percarbonate	NOEC	7.4	<i>Pimephales promelas</i>	Method not given	96 hour(s)	
disodium disilicate	NOEC	348	<i>Brachydanio rerio</i>	Method not given	96 hour(s)	
alkyl alcohol alkoxylate		No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate		No data available				
subtilisin		No data available				

## Aquatic long-term toxicity - crustacea

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

## Sun Professional Tablets

		available				
alkyl alcohol alkoxylate		No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate		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
sodium carbonate		No data available			-	
sodium percarbonate		No data available			-	
disodium disilicate		No data available			-	
alkyl alcohol alkoxylate		No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate		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			-	
disodium disilicate		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			-	
disodium disilicate		No data available			-	
subtilisin		No data available			-	

Terrestrial toxicity - birds, if available:

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

## Sun Professional Tablets

		available				
sodium percarbonate		No data available			-	
disodium disilicate		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 <sub>50</sub>	Method	Evaluation
sodium carbonate					Not applicable (inorganic substance)
sodium percarbonate					Not applicable (inorganic substance)
disodium disilicate					Not applicable (inorganic substance)
alkyl alcohol alkoxylate					No data available
tetrasodium (1-hydroxy ethylidene)bisphosphonate					No data available
subtilisin				OECD 301B	Readily biodegradable

Ready biodegradability - anaerobic and marine conditions, if available:

Degradation in relevant environmental compartments, if available:

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.

**12.3 Bioaccumulative potential**

Partition coefficient n-octanol/water (log Kow)

Ingredient(s)	Value	Method	Evaluation	Remark
sodium carbonate	No data available		No bioaccumulation expected	
sodium percarbonate	No data available			
disodium disilicate	No data available		Low potential for bioaccumulation	
alkyl alcohol alkoxylate	No data available			
tetrasodium (1-hydroxy ethylidene)bisphosphonate	No data available			
subtilisin	< 0			

Bioconcentration factor (BCF)

Ingredient(s)	Value	Species	Method	Evaluation	Remark
sodium carbonate	No data available			No bioaccumulation expected	
sodium percarbonate	No data available				
disodium disilicate	No data available				
alkyl alcohol alkoxylate	No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate	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 K <sub>oc</sub>	Desorption coefficient Log K <sub>oc</sub> (des)	Method	Soil/sediment type	Evaluation
sodium carbonate	No data available				Potential for mobility in soil, soluble in water
sodium percarbonate	No data available				High potential for mobility in

## Sun Professional Tablets

					soil
disodium disilicate	No data available				
alkyl alcohol alkoxylate	No data available				
tetrasodium (1-hydroxy ethylidene)bisphosphonate	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.

**European Waste Catalogue:**

20 01 29\* - detergents containing dangerous substances.

**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

**Class:** -

**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 73/78 and the IBC Code:** The product is not transported in bulk tankers.

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations:**

- Regulation (EC) No 1272/2008 - CLP
- Regulation (EC) No. 1907/2006 - REACH

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

**Ingredients according to EC Detergents Regulation 648/2004**

oxygen-based bleaching agents	15 - 30 %
polycarboxylates	5 - 15 %
non-ionic surfactants, phosphonates	< 5 %
enzymes, perfumes	

**15.2 Chemical safety assessment**

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*

**SDS code:** MSDS3745

**Version:** 14.0

**Revision:** 2016-05-29

**Reason for revision:**

This data sheet contains changes from the previous version in section(s):, 3, 15

**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.

**Sun Professional Tablets****Full text of the R, H and EUH phrases mentioned in section 3:**

- H272 - May intensify fire; oxidiser.
- H302 - 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.
- R 8 - Contact with combustible material may cause fire.
- R22 - Harmful if swallowed.
- R36 - Irritating to eyes.
- R37 - Irritating to respiratory system.
- R38 - Irritating to skin.
- R41 - Risk of serious damage to eyes.
- R42 - May cause sensitisation by inhalation.
- R50 - Very toxic to aquatic organisms.

**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

**End of Safety Data Sheet**