



## Shield Toilet Descaler

Revision: 2019-02-07

Version: 02.0

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

#### 1.1 Product identifier

**Trade name:** Shield Toilet Descaler

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

**Identified uses:**

For professional use only.

AISE-P307 - Descaling agent. Manual process

**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

Diversey Hygiene Sales Limited

Jamestown Road, Finglas, Dublin 11, Ireland

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

Email: dublin.orders@diversey.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

Skin Corr. 1B (H314)

Aquatic Chronic 3 (H412)

Met. Corr. 1 (H290)

#### 2.2 Label elements



**Signal word:** Danger.

Contains hydrochloric acid (Hydrochloric Acid), phosphoric acid (Phosphoric Acid).

#### Hazard statements:

H314 - Causes severe skin burns and eye damage.

H412 - Harmful to aquatic life with long lasting effects.

H290 - May be corrosive to metals.

#### Precautionary statements:

P280 - Wear protective gloves, protective clothing and eye or face protection.

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

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

P310 - Immediately call a POISON CENTRE, doctor or physician.

#### 2.3 Other hazards

No other hazards known.

### SECTION 3: Composition/information on ingredients

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## 3.2 Mixtures

Ingredient(s)	EC number	CAS number	REACH number	Classification	Notes	Weight percent
phosphoric acid	231-633-2	7664-38-2	01-2119485924-24	Skin Corr. 1B (H314) Met. Corr. 1 (H290)		3-10
hydrochloric acid	231-595-7	7647-01-0	01-2119484862-27	Skin Corr. 1B (H314) STOT SE 3 (H335) Met. Corr. 1 (H290)		3-10
propane-1,2-diol	200-338-0	57-55-6	01-2119456809-23	Not classified as hazardous		1-3
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	232-447-4	8030-78-2	01-2119970170-45	Skin Corr. 1B (H314) Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)		1-3
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	263-179-6	61791-46-6	No data available	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 3 (H412)		0.1-1
dimethyl tallow alkyl amines hydrochlorides	-	-	No data available	Skin Corr. 1B (H314) Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)		0.01-0.1

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

#### General Information:

If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position and seek medical advice. Provide fresh air. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator.

#### Inhalation:

Get medical attention or advice if you feel unwell.

#### Skin contact:

Wash skin with plenty of lukewarm, gently flowing water for at least 30 minutes. Take off immediately all contaminated clothing and wash it before re-use. Immediately call a POISON CENTRE, doctor or physician.

#### 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. Immediately call a POISON CENTRE, doctor or physician.

#### Ingestion:

Rinse mouth. Immediately drink 1 glass of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Keep at rest. Immediately call a POISON CENTRE, doctor or physician.

#### 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:

Causes severe burns.

#### Eye contact:

Causes severe or permanent damage.

#### Ingestion:

Ingestion will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.

### 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

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**6.1 Personal precautions, protective equipment and emergency procedures**

Wear suitable protective clothing, gloves and eye/face protection.

**6.2 Environmental precautions**

Do not allow to enter drainage system, surface or ground water. Do not allow to enter the ground/soil. Dilute with plenty of water. Inform responsible authorities in case undiluted product reaches drainage system, surface or ground water or the ground/soil.

**6.3 Methods and material for containment and cleaning up**

Use neutralising agent. Absorb with liquid-binding material (sand, diatomite, universal binders, sawdust).

**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. 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. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Use personal protective equipment as required. Avoid contact with skin and eyes. Use only with adequate ventilation.

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

Store in accordance with local and national regulations. Keep only in original packaging. 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)
phosphoric acid	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
hydrochloric acid	8 mg/m <sup>3</sup> 5 ppm	10 ppm 15 mg/m <sup>3</sup>
propane-1,2-diol	10 mg/m <sup>3</sup> particulates 150 ppm total vapour and particulates 470 mg/m <sup>3</sup> total vapour and particulates	1410 mg/m <sup>3</sup> particulates 30 mg/m <sup>3</sup> 450 ppm total vapour and particulates

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
phosphoric acid	-	-	-	-
hydrochloric acid	-	-	-	-
propane-1,2-diol	-	-	-	-
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	-	-	-	2.83
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-
dimethyl tallow alkyl amines hydrochlorides	No data available	No data available	No data available	No data available

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)
phosphoric acid	No data available	-	No data available	-
hydrochloric acid	No data available	-	No data available	-

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propane-1,2-diol	No data available	-	No data available	-
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	-	-	-	4.7
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-
dimethyl tallow alkyl amines hydrochlorides	No data available	No data available	No data available	No data available

## 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)
phosphoric acid	No data available	-	No data available	-
hydrochloric acid	No data available	-	No data available	-
propane-1,2-diol	No data available	-	No data available	-
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	-	-	-	2.83
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available	-	-	-
dimethyl tallow alkyl amines hydrochlorides	No data available	No data available	No data available	No data available

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
phosphoric acid	-	-	2.92	1
hydrochloric acid	15	-	8	-
propane-1,2-diol	-	-	10	168
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	-	-	-	3.32
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-
dimethyl tallow alkyl amines hydrochlorides	No data available	No data available	No data available	No data available

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
phosphoric acid	-	-	0.73	-
hydrochloric acid	-	-	-	-
propane-1,2-diol	-	-	10	50
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	-	-	-	0.98
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-
dimethyl tallow alkyl amines hydrochlorides	No data available	No data available	No data available	No data available

## 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)
phosphoric acid	-	-	-	-
hydrochloric acid	0.036	0.036	0.045	0.036
propane-1,2-diol	260	26	183	20000
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	0.00068	0.000068	0.00013	1.1
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-
dimethyl tallow alkyl amines hydrochlorides	No data available	No data available	No data available	No data available

## Environmental exposure - PNEC, continued

Ingredient(s)	Sediment, freshwater (mg/kg)	Sediment, marine (mg/kg)	Soil (mg/kg)	Air (mg/m <sup>3</sup> )
phosphoric acid	-	-	-	-
hydrochloric acid	-	-	-	-
propane-1,2-diol	572	57.2	50	-
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	0.201	0.0201	7	-
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-
dimethyl tallow alkyl amines hydrochlorides	No data available	No data available	No data available	No data available

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

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**Personal protective equipment****Eye / face protection:**

Safety glasses or goggles (EN 166). The use of a full-face shield or other full-face protection is strongly recommended when handling open containers or if splashes may occur.

**Hand protection:**

Chemical-resistant protective gloves (EN 374). Verify instructions regarding permeability and breakthrough time, as provided by the gloves supplier. Consider specific local use conditions, such as risk of splashes, cuts, contact time and temperature.

Suggested gloves for prolonged contact: Material: butyl rubber Penetration time:  $\geq 480$  min Material thickness:  $\geq 0.7$  mm

Suggested gloves for protection against splashes: Material: nitrile rubber Penetration time:  $\geq 30$  min Material thickness:  $\geq 0.4$  mm

In consultation with the supplier of protective gloves a different type providing similar protection may be chosen.

**Body protection:**

Wear chemical-resistant clothing and boots in case direct dermal exposure and/or splashes may occur (EN 14605).

**Respiratory protection:**

No special requirements under normal use conditions.

**Environmental exposure controls:**

Should not reach sewage water or drainage ditch undiluted or unneutralised.

**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

**Physical State:** Liquid

**Colour:** Blue

**Odour:** Slightly perfumed

**Odour threshold:** Not applicable

**pH:** 0.8 (neat)

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

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

**Method / remark**

ISO 4316

Not relevant to classification of this product

See substance data

Substance data, boiling point

Ingredient(s)	Value (°C)	Method	Atmospheric pressure (hPa)
phosphoric acid	158	Method not given	1013
hydrochloric acid	50-90	Method not given	
propane-1,2-diol	185-190	Method not given	1013
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available		
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		
dimethyl tallow alkyl amines hydrochlorides	No data available		

**Method / remark**

**Flammability (liquid):** Not flammable.

**Flash point (°C):** Not applicable.

**Sustained combustion:** Not applicable.

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

**Evaporation rate:** Not determined

Not relevant to classification of this product

**Flammability (solid, gas):** Not applicable to liquids

**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)
propane-1,2-diol	2.6	12.6

**Method / remark**

**Vapour pressure:** Not determined

See substance data

Substance data, vapour pressure

Ingredient(s)	Value (Pa)	Method	Temperature (°C)
phosphoric acid	4	Method not given	20
hydrochloric acid	1450-6100	Method not given	20
propane-1,2-diol	18.6	Method not given	20
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available		
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		
dimethyl tallow alkyl amines hydrochlorides	No data available		

**Method / remark**

**Vapour density:** Not determined

**Relative density:**  $\approx 1.10$  (20 °C)

Not relevant to classification of this product  
OECD 109 (EU A.3)

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**Solubility in / Miscibility with Water:** Fully miscible

Substance data, solubility in water

Ingredient(s)	Value (g/l)	Method	Temperature (°C)
phosphoric acid	Soluble		
hydrochloric acid	500	Method not given	
propane-1,2-diol	Soluble	Method not given	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available		
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		
dimethyl tallow alkyl amines hydrochlorides	No data available		

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

**Autoignition temperature:** Not determined  
**Decomposition temperature:** Not applicable.  
**Viscosity:** Not determined 185 mPa.s (20 °C)  
**Explosive properties:** Not explosive.  
**Oxidising properties:** Not oxidising.

**Method / remark**

Not relevant to classification of this product

DM-006 Viscosity - Standard

**9.2 Other information**

**Surface tension (N/m):** Not determined  
**Corrosion to metals:** Corrosive

OECD 115

Weight of evidence

Substance data, dissociation constant, if available:

## 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 alkali and metals. Keep away from products containing chlorine-based bleaching agents or sulphites.

### 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): >5000

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)
phosphoric acid	LD <sub>50</sub>	> 300	Rat	OECD 423 (EU B.1 tris)	
hydrochloric acid	LD <sub>50</sub>	900	Rabbit	Method not given	
propane-1,2-diol	LD <sub>50</sub>	> 10000	Rat	Method not given	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	LD <sub>50</sub>	300-2000	Rat	Method not given	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	LD <sub>50</sub>	> 2000	Rat	Read across	
dimethyl tallow alkyl amines hydrochlorides		No data available			

Acute dermal toxicity

Ingredient(s)	Endpoint	Value	Species	Method	Exposure
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		(mg/kg)			time (h)
phosphoric acid	LD <sub>50</sub>	2740	Rabbit	Method not given	
hydrochloric acid	LD <sub>50</sub>	> 5010	Rabbit	Method not given	
propane-1,2-diol	LD <sub>50</sub>	> 2000	Rabbit	Method not given	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	LD <sub>50</sub>	200-1000			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	LD <sub>50</sub>	> 2000	Rat	Read across	
dimethyl tallow alkyl amines hydrochlorides		No data available			

## Acute inhalative toxicity

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
phosphoric acid	LC <sub>50</sub>	850	Rat	Method not given	2
hydrochloric acid	LC <sub>50</sub>	8 (mist)	Rat	Method not given	0.5
propane-1,2-diol	LC <sub>50</sub>	> 317 (mist) No mortality observed	Rabbit	Non guideline test	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			
dimethyl tallow alkyl amines hydrochlorides		No data available			

## Irritation and corrosivity

## Skin irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
phosphoric acid	Corrosive	Rabbit	OECD 404 (EU B.4)	
hydrochloric acid	Corrosive	Rabbit	Method not given	
propane-1,2-diol	Not irritant	Rabbit	OECD 404 (EU B.4)	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	Corrosive			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Irritant	Rabbit	Read across OECD 404 (EU B.4)	
dimethyl tallow alkyl amines hydrochlorides	No data available			

## Eye irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
phosphoric acid	Severe damage	Rabbit	Method not given	
hydrochloric acid	Corrosive Severe damage	Rabbit	OECD 405 (EU B.5)	
propane-1,2-diol	Not corrosive or irritant	Rabbit	OECD 405 (EU B.5)	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Severe damage	Rabbit	OECD 405 (EU B.5)	
dimethyl tallow alkyl amines hydrochlorides	No data available			

## Respiratory tract irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
phosphoric acid	No data available			
hydrochloric acid	No data available			
propane-1,2-diol	No data available			
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available			
dimethyl tallow alkyl amines hydrochlorides	No data available			

## Sensitisation

## Sensitisation by skin contact

Ingredient(s)	Result	Species	Method	Exposure time (h)
phosphoric acid	Not sensitising	Human	Human experience	
hydrochloric acid	Not sensitising	Guinea pig	OECD 406 (EU B.6) / GPMT	
propane-1,2-diol	Not sensitising	Guinea pig	OECD 406 (EU B.6) / GPMT	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not sensitising	Guinea pig	OECD 406 (EU B.6) / Buehler test Read across	
dimethyl tallow alkyl amines hydrochlorides	No data available			

## Sensitisation by inhalation

Ingredient(s)	Result	Species	Method	Exposure time
phosphoric acid	No data available			
hydrochloric acid	No data available			

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propane-1,2-diol	No data available			
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available			
dimethyl tallow alkyl amines hydrochlorides	No data available			

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

## Mutagenicity

Ingredient(s)	Result (in-vitro)	Method (in-vitro)	Result (in-vivo)	Method (in-vivo)
phosphoric acid	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) OECD 473 OECD 476 (Mouse lymphoma)	No data available	
hydrochloric acid	No evidence for mutagenicity	OECD 471 (EU B.12/13)	No data available	
propane-1,2-diol	No evidence for mutagenicity, negative test results	Method not given	No data available	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available		No data available	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No evidence for mutagenicity, negative test results	OECD 471 (EU B.12/13) Read across	No evidence of genotoxicity, negative test results	OECD 475 (EU B.11) OECD 478 Read across
dimethyl tallow alkyl amines hydrochlorides	No data available		No data available	

## Carcinogenicity

Ingredient(s)	Effect
phosphoric acid	No data available
hydrochloric acid	No evidence for carcinogenicity, negative test results
propane-1,2-diol	No evidence for carcinogenicity, negative test results
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No evidence for carcinogenicity, negative test results
dimethyl tallow alkyl amines hydrochlorides	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
phosphoric acid	NOAEL	Developmental toxicity	410	Rat	OECD 422, oral	10 day(s)	No evidence for reproductive toxicity No evidence for developmental toxicity
hydrochloric acid			No data available				No evidence for reproductive toxicity
propane-1,2-diol			No data available				No evidence for reproductive toxicity
quaternary ammonium compounds, trimethyltallow alkyl, chlorides			No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	NOAEL	Developmental toxicity Teratogenic effects	25	Rat	Read across		No evidence for developmental toxicity
dimethyl tallow alkyl amines hydrochlorides			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
phosphoric acid	NOAEL	250	Rat	OECD 422, oral		
hydrochloric acid		No data available				
propane-1,2-diol		No data available				
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available				
dimethyl tallow alkyl amines hydrochlorides		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
phosphoric acid		No data available				
hydrochloric acid		No data available				



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		available				
propane-1,2-diol		No data available				
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available				
dimethyl tallow alkyl amines hydrochlorides		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
phosphoric acid		No data available				
hydrochloric acid		No data available				
propane-1,2-diol		No data available				
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available				
dimethyl tallow alkyl amines hydrochlorides		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
phosphoric acid			No data available					
hydrochloric acid			No data available					
propane-1,2-diol			No data available					
quaternary ammonium compounds, trimethyltallow alkyl, chlorides			No data available					
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides			No data available					
dimethyl tallow alkyl amines hydrochlorides			No data available					

## STOT-single exposure

Ingredient(s)	Affected organ(s)
phosphoric acid	No data available
hydrochloric acid	No data available
propane-1,2-diol	No data available
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not applicable
dimethyl tallow alkyl amines hydrochlorides	No data available

## STOT-repeated exposure

Ingredient(s)	Affected organ(s)
phosphoric acid	No data available
hydrochloric acid	No data available
propane-1,2-diol	No data available
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not applicable
dimethyl tallow alkyl amines hydrochlorides	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:

## Shield Toilet Descaler

## Aquatic short-term toxicity

## Aquatic short-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
phosphoric acid	LC <sub>50</sub>	138	<i>Gambusia affinis</i>	Method not given	96
hydrochloric acid	LC <sub>50</sub>	7.45	<i>Various species</i>	Method not given	96
propane-1,2-diol	LC <sub>50</sub>	> 1000	<i>Fish</i>	Method not given	24
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	LC <sub>50</sub>	> 0.1-1	<i>Oncorhynchus mykiss</i>	Method not given	96
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	LC <sub>50</sub>	> 0.1 - 1	<i>Brachydanio rerio</i>	Method not given	96
dimethyl tallow alkyl amines hydrochlorides		No data available			

## Aquatic short-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
phosphoric acid	EC <sub>50</sub>	> 100	<i>Daphnia magna Straus</i>	OECD 202 (EU C.2)	48
hydrochloric acid	EC <sub>50</sub>	0.492	<i>Daphnia magna Straus</i>	Method not given	48
propane-1,2-diol	EC <sub>50</sub>	> 100	<i>Daphnia</i>	Method not given	48
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	EC <sub>50</sub>	> 0.01-0.1	<i>Daphnia</i>	Read across	48
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	EC <sub>50</sub>	> 0.1 - 1	<i>Daphnia magna Straus</i>	Method not given	48
dimethyl tallow alkyl amines hydrochlorides		No data available			

## Aquatic short-term toxicity - algae

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (h)
phosphoric acid	EC <sub>50</sub>	> 100	<i>Desmodesmus subspicatus</i>	OECD 201 (EU C.3)	72
hydrochloric acid	EC <sub>50</sub>	0.78	<i>Pseudokirchneriella subcapitata</i>	Method not given	72
propane-1,2-diol	EC <sub>50</sub>	24200	<i>Desmodesmus subspicatus</i>	OECD 201 (EU C.3)	72
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	EC <sub>50</sub>	> 0.01-0.1	<i>Not specified</i>	Read across	72
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	E <sub>r</sub> C <sub>50</sub>	0.19	<i>Pseudokirchneriella subcapitata</i>	Read across	72
dimethyl tallow alkyl amines hydrochlorides		No data available			

## Aquatic short-term toxicity - marine species

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time (days)
phosphoric acid		No data available			-
hydrochloric acid		No data available			-
propane-1,2-diol		No data available			-
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			-
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			-
dimethyl tallow alkyl amines hydrochlorides		No data available			

## Impact on sewage plants - toxicity to bacteria

Ingredient(s)	Endpoint	Value (mg/l)	Inoculum	Method	Exposure time
phosphoric acid	EC <sub>50</sub>	270	<i>Activated sludge</i>	Method not given	
hydrochloric acid		No data available			
propane-1,2-diol	EC <sub>0</sub>	> 20000	<i>Pseudomonas putida</i>	Method not given	18 hour(s)
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	EC <sub>10</sub>	24	<i>Pseudomonas putida</i>	Read across	18 hour(s)
dimethyl tallow alkyl amines hydrochlorides		No data available			

## Aquatic long-term toxicity

## Shield Toilet Descaler

## Aquatic long-term toxicity - fish

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
phosphoric acid		No data available				
hydrochloric acid		No data available				
propane-1,2-diol		No data available				
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	NOEC	0.42	<i>Pimephales promelas</i>	Read across		
dimethyl tallow alkyl amines hydrochlorides		No data available				

## Aquatic long-term toxicity - crustacea

Ingredient(s)	Endpoint	Value (mg/l)	Species	Method	Exposure time	Effects observed
phosphoric acid		No data available				
hydrochloric acid		No data available				
propane-1,2-diol	NOEC	13020	<i>Ceriodaphnia dubia</i>	Method not given	7 day(s)	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	NOEC	> 0.001 - 0.01	<i>Daphnia magna</i>	OECD 211	21 day(s)	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	NOEC	0.7	<i>Daphnia magna</i>	Read across OECD 211	21 day(s)	
dimethyl tallow alkyl amines hydrochlorides		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
phosphoric acid		No data available			-	
hydrochloric acid		No data available			-	
propane-1,2-diol		No data available			-	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			-	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			-	
dimethyl tallow alkyl amines hydrochlorides		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
phosphoric acid		No data available			-	
hydrochloric acid		No data available			-	
propane-1,2-diol		No data available			-	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			-	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			-	

## Terrestrial toxicity - plants, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
phosphoric acid		No data available			-	
hydrochloric acid		No data available			-	
propane-1,2-diol		No data available			-	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			-	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			-	

## Terrestrial toxicity - birds, if available:

Ingredient(s)	Endpoint	Value	Species	Method	Exposure	Effects observed
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## Shield Toilet Descaler

					time (days)	
phosphoric acid		No data available			-	
hydrochloric acid		No data available			-	
propane-1,2-diol		No data available			-	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			-	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			-	

Terrestrial toxicity - beneficial insects, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
phosphoric acid		No data available			-	
hydrochloric acid		No data available			-	
propane-1,2-diol		No data available			-	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			-	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			-	

Terrestrial toxicity - soil bacteria, if available:

Ingredient(s)	Endpoint	Value (mg/kg dw soil)	Species	Method	Exposure time (days)	Effects observed
phosphoric acid		No data available			-	
hydrochloric acid		No data available			-	
propane-1,2-diol		No data available			-	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides		No data available			-	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			-	

## 12.2 Persistence and degradability

### Abiotic degradation

Abiotic degradation - photodegradation in air, if available:

Abiotic degradation - hydrolysis, if available:

Abiotic degradation - other processes, if available:

### Biodegradation

Ready biodegradability - aerobic conditions

Ingredient(s)	Inoculum	Analytical method	DT <sub>50</sub>	Method	Evaluation
phosphoric acid					Not applicable (inorganic substance)
hydrochloric acid					Not applicable (inorganic substance)
propane-1,2-diol			> 70 % in 28 day(s)	OECD 301A	Readily biodegradable
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	Activated sludge, aerobe	Oxygen depletion		OECD 301D	Readily biodegradable
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		Oxygen depletion	> 60%	OECD 301D	Readily biodegradable
dimethyl tallow alkyl amines hydrochlorides					No data available

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
phosphoric acid	No data available		No bioaccumulation expected	
hydrochloric acid	-0.25	Method not given	No bioaccumulation expected	
propane-1,2-diol	-1.07	Method not given	No bioaccumulation expected	
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		No bioaccumulation expected	

## Shield Toilet Descaler

dimethyl tallow alkyl amines hydrochlorides	No data available		
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## Bioconcentration factor (BCF)

Ingredient(s)	Value	Species	Method	Evaluation	Remark
phosphoric acid	No data available			No bioaccumulation expected	
hydrochloric acid	No data available				
propane-1,2-diol	No data available				
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-			Not relevant, does not bioaccumulate	
dimethyl tallow alkyl amines hydrochlorides	No data available				

## 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
phosphoric acid	No data available				Potential for mobility in soil, soluble in water
hydrochloric acid	No data available				High potential for mobility in soil
propane-1,2-diol	No data available				Potential for mobility in soil, soluble in water
quaternary ammonium compounds, trimethyltallow alkyl, chlorides	No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available				
dimethyl tallow alkyl amines hydrochlorides	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 14\* - acids.

**Empty packaging****Recommendation:**

Dispose of observing national or local regulations.

**Suitable cleaning agents:**

Water, if necessary with cleaning agent.

**SECTION 14: Transport information****Land transport (ADR/RID), Sea transport (IMDG), Air transport (ICAO-TI / IATA-DGR)****14.1 UN number:** 3264**14.2 UN proper shipping name:**

Corrosive liquid, acidic, inorganic, n.o.s. ( hydrochloric acid , phosphoric acid )

**14.3 Transport hazard class(es):**

Transport hazard class (and subsidiary risks): 8

**14.4 Packing group:** III**14.5 Environmental hazards:**

Environmentally hazardous: No

Marine pollutant: No

**14.6 Special precautions for user:** None known.**14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code:** The product is not transported in bulk tankers.**Other relevant information:**

## Shield Toilet Descaler

**ADR**

Classification code: C1

Tunnel restriction code: E

Hazard identification number: 80

**IMO/IMDG**

EmS: F-A, S-B

The product has been classified, labelled and packaged in accordance with the requirements of ADR and the provisions of the IMDG Code Transport regulations include special provisions for certain classes of dangerous goods packed in limited quantities.

**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

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

UFI: 5643-Q0WE-A003-GU3T

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

cationic surfactants, non-ionic surfactants  
perfumes, Eugenol, Hexyl Cinnamal

&lt; 5 %

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**

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: MS1003496

Version: 02.0

Revision: 2019-02-07

**Reason for revision:**

This data sheet contains changes from the previous version in section(s):, 2, 3, 8, 9, 11, 12, 16

**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:**

- H290 - May be corrosive to metals.
- H302 - Harmful if swallowed.
- H314 - Causes severe skin burns and eye damage.
- H315 - Causes skin irritation.
- H318 - Causes serious eye damage.
- H335 - May cause respiratory irritation.
- H400 - Very toxic to aquatic life.
- H410 - Very toxic to aquatic life with long lasting effects.
- H412 - Harmful 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

**End of Safety Data Sheet**