



## Shield Toilet Descaler

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

#### 1.1 Product identifier

**Trade name:** Shield Toilet Descaler

UFI: 5643-Q0WE-A003-GU3T

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

**Product use:** Toilet bowl cleaner.  
For professional use only.

**Uses advised against:** Uses other than those identified are not recommended.

**SWED - Sector-specific worker exposure description :**  
AISE\_SWED\_PW\_19\_2

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

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

#### Contact details

Diversey Ltd  
Weston Favell Centre, Northampton NN3 8PD, United Kingdom  
Tel: 01604 405311, Fax: 01604 406809  
Regulatory Email: customerservice.uk@diversey.com

#### 1.4 Emergency telephone number

Seek medical advice (show the label or safety data sheet where possible)  
For medical or environmental emergency only:  
call 0800 052 0185

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Skin Corr. 1C (H314)  
Eye Dam. 1 (H318)  
Aquatic Chronic 3 (H412)  
Met. Corr. 1 (H290)

#### 2.2 Label elements



**Signal word:** Danger.

Contains phosphoric acid (Phosphoric Acid), hydrochloric acid (Hydrochloric Acid), Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides (Tallowtrimonium Chloride)

#### Hazard statements:

H290 - May be corrosive to metals.  
H314 - Causes severe skin burns and eye damage.  
H412 - Harmful to aquatic life with long lasting effects.

#### 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.

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

### 2.3 Other hazards

No other hazards known.

## SECTION 3: Composition/information on ingredients

### 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) Acute Tox. 4 (H302) Eye Dam. 1 (H318) 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) Eye Dam. 1 (H318) 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	268-074-9	-	01-2119970170-45	Acute Tox. 3 (H311) Skin Corr. 1C (H314) Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Chronic 1 (H410)		1-3
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	263-179-6	61791-46-6	01-2120770736-44	Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411)		0.1-1

#### Specific concentration limits

phosphoric acid:

- Eye Dam. 1 (H318) >= 25% > Eye Irrit. 2 (H319) >= 10%
- Skin Corr. 1B (H314) >= 25% > Skin Irrit. 2 (H315) >= 10%

hydrochloric acid:

- Eye Dam. 1 (H318) >= 25% > Eye Irrit. 2 (H319) >= 10%
- Skin Corr. 1B (H314) >= 25% > Skin Irrit. 2 (H315) >= 10%
- STOT SE 3 (H335) >= 10%

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

ATE, if available, are listed in section 11.

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 unconscious place in recovery position and seek medical advice. Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. 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 reuse. 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.

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**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**

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

**6.2 Environmental precautions**

Dilute with plenty of water. Do not allow to enter drainage system, surface or ground water. Do not allow to enter the ground/soil. 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**

Dyke to collect large liquid spills. Use neutralising agent. Absorb with liquid-binding material (sand, diatomite, universal binders, sawdust). Do not place spilled materials back into the original container. Collect in closed and suitable containers for disposal.

**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 face, hands and any exposed skin thoroughly after handling. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Avoid contact with skin and eyes. 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. 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)	UK - Long term value(s)	UK - Short term value(s)
phosphoric acid	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
hydrochloric acid	1 ppm aerosol mist and gas 2 mg/m <sup>3</sup> aerosol mist and gas	5 ppm aerosol mist and gas 8 mg/m <sup>3</sup> aerosol mist and gas
propane-1,2-diol	150 ppm total vapour and particulates 474 mg/m <sup>3</sup> total vapour and particulates 10 mg/m <sup>3</sup> particulates	450 ppm total vapour and particulates 1422 mg/m <sup>3</sup> total vapour and particulates 30 mg/m <sup>3</sup> particulate

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/DMEL 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	-	-	-	0.1
hydrochloric acid	-	-	-	-
propane-1,2-diol	-	-	-	-
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	-	-	-	2.83
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-

DNEL/DMEL 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	-	-	-	-
propane-1,2-diol	-	-	-	-
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available	-	No data available	4.7
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	0.3

DNEL/DMEL 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	-	-	-	-
propane-1,2-diol	-	-	-	-
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available	-	No data available	2.83
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available	-	-	-

DNEL/DMEL 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	-	-	-	3.32
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	1.48

DNEL/DMEL 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	-	-	-	0.98
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-	-	-	-

**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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	0.00068	0.000068	0	1.1
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	0.000356	0.000036	0.00047	3.43

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, (C16-18 and	9.57	0.957	7	-

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C18-unsaturated alkyl)trimethyl, chlorides				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	1.7	0.17	0.81	-

## 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.

## REACH use scenarios considered for the undiluted product:

	SWED - Sector-specific worker exposure description	LCS	PROC	Duration (min)	ERC
Manual application	AISE_SWED_PW_19_2	PW	PROC 19	480	ERC8a

## 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: ≥ 480 min Material thickness: ≥ 0.7 mm  
 Suggested gloves for protection against splashes: Material: nitrile rubber Penetration time: ≥ 30 min Material thickness: ≥ 0.4 mm  
 In consultation with the supplier of protective gloves a different type providing similar protection may be chosen.

## Body protection:

No special requirements under normal use conditions. 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

	Method / remark
<b>Physical state:</b> Liquid	
<b>Colour:</b> Clear , Blue	
<b>Odour:</b> Product specific	
<b>Odour threshold:</b> Not applicable	
<b>Melting point/freezing point (°C):</b> Not determined	Not relevant to classification of this product
<b>Initial boiling point and boiling range (°C):</b> Not determined	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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available		
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		

## Method / remark

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

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

**Flash point (°C):** Not applicable.

**Sustained combustion:** Not applicable.

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

**Lower and upper explosion limit/flammability limit (%):** Not determined

See substance data

Substance data, flammability or explosive limits, if available:

Ingredient(s)	Lower limit	Upper limit

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	(% vol)	(% vol)
propane-1,2-diol	2.6	12.6

## Method / remark

**Autoignition temperature:** Not determined  
**Decomposition temperature:** Not applicable.  
**pH:** = < 2 (neat)  
**Kinematic viscosity:** ≈ 185 mPa.s (20 °C)  
**Solubility in / Miscibility with water:** Fully miscible

ISO 4316

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available		
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		

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

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available		
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		

## Method / remark

**Relative density:** ≈ 1.10 (20 °C)  
**Relative vapour density:** No data available.  
**Particle characteristics:** No data available.

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

## 9.2 Other information

## 9.2.1 Information with regard to physical hazard classes

**Explosive properties:** Not explosive.  
**Oxidising properties:** Not oxidising.  
**Corrosion to metals:** Corrosive

Weight of evidence

## 9.2.2 Other safety characteristics

**Acid reserve:** ≈ -9.5 (g NaOH / 100g; pH=4)**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

May be corrosive to metals. Reacts with alkali. 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**

## Shield Toilet Descaler

## 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Mixture data:.

## Relevant calculated ATE(s):

ATE - Oral (mg/kg): &gt;2000

ATE - Dermal (mg/kg): &gt;2000

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)	ATE (mg/kg)
phosphoric acid	LD <sub>50</sub>	> 300-5000	Rat	OECD 423 (EU B.1 tris)		2600
hydrochloric acid	LD <sub>50</sub>	900	Rabbit	Method not given		Not established
propane-1,2-diol	LD <sub>50</sub>	> 10000	Rat	Method not given		Not established
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	LD <sub>50</sub>	630	Rat	OECD 401 (EU B.1)		630
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	LD <sub>50</sub>	> 2000	Rat	Read across		290000

## Acute dermal toxicity

Ingredient(s)	Endpoint	Value (mg/kg)	Species	Method	Exposure time (h)	ATE (mg/kg)
phosphoric acid	LD <sub>50</sub>	2740	Rabbit	Method not given		Not established
hydrochloric acid	LD <sub>50</sub>	> 5010	Rabbit	Method not given		Not established
propane-1,2-diol	LD <sub>50</sub>	> 2000	Rabbit	Method not given		Not established
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	LD <sub>50</sub>	582	Rabbit	OECD 402 (EU B.3)		528
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	LD <sub>50</sub>	> 2000	Rat	Read across		Not established

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides		No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data available			

## Acute inhalative toxicity, continued

Ingredient(s)	ATE - inhalation, dust (mg/l)	ATE - inhalation, mist (mg/l)	ATE - inhalation, vapour (mg/l)	ATE - inhalation, gas (mg/l)
phosphoric acid	Not established	Not established	Not established	Not established
hydrochloric acid	Not established	Not established	Not established	Not established
propane-1,2-diol	Not established	Not established	Not established	Not established
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	Not established	Not established	Not established	Not established
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not established	Not established	Not established	Not established

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	Corrosive	Rabbit	OECD 404 (EU B.4)	1-4 hour(s)
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not irritant			

## Eye irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
phosphoric acid	Severe damage	Rabbit	Method not given	
hydrochloric acid	Corrosive Severe	Rabbit	OECD 405 (EU B.5)	

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	damage			
propane-1,2-diol	Not corrosive or irritant	Rabbit	OECD 405 (EU B.5)	
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	Severe damage			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Severe damage	Rabbit	OECD 405 (EU B.5) Read across	

## Respiratory tract irritation and corrosivity

Ingredient(s)	Result	Species	Method	Exposure time
phosphoric acid	No data available			
hydrochloric acid	Irritating to respiratory tract			
propane-1,2-diol	No data available			
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	Not sensitising	Guinea pig	OECD 406 (EU B.6) / Buehler test	
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not sensitising	Guinea pig	OECD 406 (EU B.6) / Buehler test Read across	

## Sensitisation by inhalation

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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	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, (C16-18 and C18-unsaturated alkyl)trimethyl, 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

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No evidence for carcinogenicity, negative test results

## 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,	10 day(s)	No evidence for reproductive



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					oral		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, (C16-18 and C18-unsaturated alkyl)trimethyl, 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

**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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		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				
propane-1,2-diol		No data available				
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides			No data available					
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides			No data available					

STOT-single exposure

Ingredient(s)	Affected organ(s)

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phosphoric acid	No data available
hydrochloric acid	No data available
propane-1,2-diol	No data available
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not applicable

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	Not applicable

**Aspiration hazard**

Substances with an aspiration hazard (H304), if any, are listed in section 3.

**Potential adverse health effects and symptoms**

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

**11.2 Information on other hazards****11.2.1 Endocrine disrupting properties**

Endocrine disrupting properties - Human data, if available:

**11.2.2 Other information**

No other relevant information available.

**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)
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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	LC <sub>50</sub>	> 0.1-1	<i>Oncorhynchus mykiss</i>	OECD 203 (EU C.1)	96
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	LC <sub>50</sub>	> 0.1 - 1	<i>Brachydanio rerio</i>	OECD 203 (EU C.1)	96

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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	EC <sub>50</sub>	0.0091	<i>Daphnia magna Straus</i>	Read across	48
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	EC <sub>50</sub>	0.082	<i>Daphnia magna Straus</i>	OECD 202, static	48

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</i>	OECD 201 (EU C.3)	72

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			<i>subspicatus</i>		
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	E <sub>r</sub> C <sub>50</sub>	> 0.113	<i>Pseudokirchneriella subcapitata</i>	Read across	72
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	E <sub>r</sub> C <sub>50</sub>	0.1-1	<i>Pseudokirchneriella subcapitata</i>	OECD 201 (EU C.3)	72

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides		No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		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, (C16-18 and C18-unsaturated alkyl)trimethyl, 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)

## Aquatic long-term toxicity

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	NOEC	0.42	<i>Pimephales promelas</i>	Read across		

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, 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	< 0.1	<i>Daphnia magna</i>	OECD 211	21 day(s)	

## 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides		No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		No data				

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		available				
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**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				

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				

Terrestrial toxicity - birds, if available:

Ingredient(s)	Endpoint	Value	Species	Method	Exposure time (days)	Effects observed
phosphoric acid		No data available				
hydrochloric acid		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				

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				

**12.2 Persistence and degradability****Abiotic degradation**

Abiotic degradation - photodegradation in air, if available:

Ingredient(s)	Half-life time	Method	Evaluation	Remark
phosphoric acid	No data available			
hydrochloric acid	No data available			

Abiotic degradation - hydrolysis, if available:

Ingredient(s)	Half-life time in fresh water	Method	Evaluation	Remark
phosphoric acid	No data available			
hydrochloric acid	No data available			

Abiotic degradation - other processes, if available:

Ingredient(s)	Type	Half-life time	Method	Evaluation	Remark
phosphoric acid		No data available			
hydrochloric acid		No data 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)

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					substance)
propane-1,2-diol			> 70 % in 28 day(s)	OECD 301A	Readily biodegradable
Quaternary ammonium compounds, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	Activated sludge, aerobic	Oxygen depletion	71 % in 28 day(s)	OECD 301D	Readily biodegradable
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides		Oxygen depletion	> 60%	OECD 301D	Readily biodegradable

Ready biodegradability - anaerobic and marine conditions, if available:

Ingredient(s)	Medium & Type	Analytical method	DT <sub>50</sub>	Method	Evaluation
phosphoric acid					No data available
hydrochloric acid					No data available

Degradation in relevant environmental compartments, if available:

Ingredient(s)	Medium & Type	Analytical method	DT <sub>50</sub>	Method	Evaluation
phosphoric acid					No data available
hydrochloric acid					No data 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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available			
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	No data available		No bioaccumulation expected	

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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	-			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
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, (C16-18 and C18-unsaturated alkyl)trimethyl, chlorides	No data available				
ethanol, 2,2'-iminobis-, N-tallow alkyl derivs., N-oxides	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 Endocrine disrupting properties

Endocrine disrupting properties - Environmental effects, if available:

### 12.7 Other adverse effects

No other adverse effects known.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste from residues / unused

The concentrated contents or contaminated packaging should be disposed of by a certified handler

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**products:** 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 or ID 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 Maritime transport in bulk according to IMO instruments:** The product is not transported in bulk tankers.

**Other relevant information:**

**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**

**National regulations :**

- Regulation (EC) 1907/2006 - REACH (UK amended)
- Regulation (EC) 1272/2008 - CLP (UK amended)
- Regulation (EC) 648/2004 - Detergents regulation (UK amended)
- Delegated Regulation (EU) 2017/2100 and Regulation (EU) 2018/605 (UK amended)
- Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
- International Maritime Dangerous Goods (IMDG) Code

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

**Ingredients according to Detergents Regulation**

cationic surfactants, non-ionic surfactants

< 5 %

The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) 648/2004 on detergents (UK amended). Data to support this assertion are held at the disposal of the competent authorities of the UK and will be made available to them, at their direct request or at the request of a detergent manufacturer.

**Comah - classification:** Not classified

**15.2 Chemical safety assessment**

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

**SECTION 16: Other information**

## Shield Toilet Descaler

*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: 03.0

Revision: 2023-02-09

**Reason for revision:**

This data sheet contains changes from the previous version in section(s): Overall design adjusted in accordance with Amendment 2020/878, Annex II of Regulation (EC) No 1907/2006, 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 15, 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.
- H311 - Toxic in contact with skin.
- H314 - Causes severe skin burns and eye damage.
- 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.
- H411 - Toxic to aquatic life with long lasting effects.

**Abbreviations and acronyms:**

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

**End of Safety Data Sheet**