SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name: UNITCLEAN
Cat. No. 49900040
Container size: 1 l

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

Identified use(s): Cleaning agent. Disinfectant.
Uses advised against: No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier: Struers ApS, Singapore Branch
627A Aljunied Road
#07-08 BizTech Centre
389842 Singapore
Tel:+65 6299 2268

Responsible for safety data sheet authoring: DHI
Any questions to the contents of this safety data sheet should be sent to: struers@struers.dk

1.4. Emergency telephone number

24-hour Emergency Medical Service (EMS): 995.
SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS:
Acute oral toxicity Cat 4
Skin corrosion/irritation Cat 1B
Serious eye damage/eye irritation Cat 1
Aquatic, Acute Cat 1
Aquatic, Chronic Cat 1

2.2. Label elements

Danger
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective clothing, gloves, eye and face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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 CENTER/doctor.
P501 Dispose of contents/container in accordance with local regulations.

2.3. Other hazards

Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure.

PBT/vPvB: Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

The product contains: cationic surfactants and water.

GHS:

<table>
<thead>
<tr>
<th>%</th>
<th>CAS-No.</th>
<th>EC No.</th>
<th>REACH Reg. No.</th>
<th>Chemical name</th>
<th>Hazard classification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-60</td>
<td>68424-85-1</td>
<td>270-325-2</td>
<td>-</td>
<td>Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides</td>
<td>Acute oral toxicity Cat 4</td>
<td>Skin corrosion/irritation Cat 1B, Aquatic, Acute Cat 1, Aquatic, Chronic Cat 1</td>
</tr>
</tbody>
</table>
SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation: Move injured person into fresh air immediately. Call an ambulance. Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure. Bring these instructions. Place unconscious person on the side in the recovery position and ensure breathing.

Skin contact: Flush immediately with plenty of water and remove contaminated clothing. Call an ambulance, continue to rinse during transportation to hospital and bring these instructions.

Eye contact: Immediately flush with plenty of water. Remove any contact lenses and open eyes wide apart. Call an ambulance and continue flushing during transportation to hospital. Bring these instructions.

Ingestion: Immediately call a Poison Center/doctor. Rinse mouth. Do not induce vomiting. Do not drink anything without first consulting a doctor. Have these instructions at hand.

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

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

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

Medical attention/treatments: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media: Extinguish with foam, carbon dioxide, dry powder or water fog. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

Unsuitable extinguishing media: No specific precautions.

5.2. Special hazards arising from the substance or mixture

Specific hazards: During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Protective equipment for firefighters: Use air-supplied respirator during fire fighting.
SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Look out! The product is corrosive.

For non-emergency personnel:
Avoid inhalation of vapours and contact with skin and eyes. For personal protection, see section 8.

For emergency responders:
For personal protection, see section 8. No specific recommendations.

6.2. Environmental precautions

Environmental precautions:
Do not discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up:
Dam and absorb spillage with sand, sawdust or other absorbent. Sweep up and place into an appropriate container.

6.4. Reference to other sections

Reference:
For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice:
Avoid inhalation of vapours and contact with skin and eyes. Immediately change drenched clothing. Observe good chemical hygiene practices.

Technical measures:
Work practice should minimise contact. Do not eat, drink or smoke when using the product.

Technical precautions:
Provide easy access to water supply and eye wash facilities. Mechanical ventilation may be required.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures for safe storage:
Keep away from food, drink and animal feeding stuffs.

Storage conditions:
Store in tightly closed original container in a dry and cool place.

7.3. Specific end use(s)

Specific use(s):
No information available.
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No occupational exposure limit assigned.

8.2. Exposure controls

**Engineering measures:** An eye wash bottle must be available at the work site. Provide adequate ventilation.

**Personal protection:** Personal protection equipment should be chosen according to the ANSI standards and in discussion with the supplier of the personal protective equipment.

**Respiratory equipment:** In case of inadequate ventilation and work of brief duration, use suitable respiratory equipment. It is recommended to use respiratory equipment with combination filter, type ABEK.

**Hand protection:** Wear protective gloves. Nitrile gloves are recommended. The most suitable glove must be chosen in collaboration with the gloves supplier, who can inform about the breakthrough time of the glove material.

Breakthrough time: 480 min
Thickness: 0.5 mm (*)

**Eye protection:** Wear goggles/face shield.

**Skin protection:** Wear special protective clothing.

**Hygiene measures:** Wash hands after handling. When using do not eat, drink or smoke. Change contaminated clothing.

**Environmental Exposure Controls:** Not available.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Form: Liquid.

Colour: Colourless.

Odour: Aromatic.

Odour threshold: Not available.

pH: 5 - 7 (100 g/l; 20 °C)

Melting point: -5 °C

Boiling point: 100°C

Flash point: 160 - 170 °C

Evaporation rate: Not available.

Flammability (solid, gas): Not available.

Explosion limits: Not available.

Vapour pressure: Not available.

Vapour density: Not available.

Relative density: 0.98

Solubility: Miscible with water.

Partition coefficient (n-octanol/water): Not available.

Auto-ignition temperature (°C): Not available.

Decomposition temperature (°C): Not available.

Viscosity: Dynamic viscosity: 300 mPa.s

Explosive properties: Not available.

Oxidising properties: Not available.

9.2. Other information

Other data: Volatile Organic Compound (VOC): 0 g/l (calculated)
SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
Reactivity: No data available.

10.2. Chemical stability
Stability: Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions
Hazardous reactions: Reaction with:
Oxidising materials. Acids. Bases. (*)

10.4. Conditions to avoid
Conditions/materials to avoid: No information available.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Acute Toxicity (Oral): Harmful if swallowed.
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:
LD50=344 mg/kg (oral rat)
LD50=3340 mg/kg (Dermal Rabbit) (*)

Acute Toxicity (Dermal): Based on available data, the classification criteria are not met.

Acute Toxicity (Inhalation): Based on available data, the classification criteria are not met.

Skin Corrosion/Irritation: Causes severe burns.

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

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

STOT - Single exposure: Based on available data, the classification criteria are not met.

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

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

Inhalation: Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema.

Ingestion: Corrosive. Even small amounts may cause serious damage.
SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity: Very toxic to aquatic life with long lasting effects.
Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides:
LC50 96 hours, fish, mg/l (Lepomis machrochirus): 0.28
EC50 48 hours, Daphnia, mg/l: 0.016

12.2. Persistence and degradability
Degradability: >80 %. The product is expected to be readily biodegradable.

12.3. Bioaccumulative potential
Bioaccumulative potential: No data available on bioaccumulation.

12.4. Mobility in soil
Mobility: No data available.

12.5. Results of PBT and vPvB assessment
PBT/vPvB: This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects
Other adverse effects: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from residues: Dispose of waste and residues in accordance with local authority requirements.
Contaminated packaging: Dispose of waste and residues in accordance with local authority requirements.
SECTION 14: TRANSPORT INFORMATION

14.1. UN number
UN-No: 1760

14.2. UN proper shipping name
Proper Shipping Name: CORROSIVE LIQUID, N.O.S. (Quaternary ammonium compounds)

Additional IMDG information:
EmS: F-A, S-B
MFAG: 1
Segregation Group: Alkali

14.3. Transport hazard class(es)
Class: 8

14.4. Packing group
PG: II

14.5. Environmental hazards
Marine pollutant: Yes.
Environmentally Hazardous Substance: Yes.

14.6. Special precautions for user
Special precautions: None known.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Transport in bulk: Not relevant.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 8, 10, 11.
The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Abbreviations and acronyms used in the safety data sheet:
PBT = Persistent, Bioaccumulative and Toxic.
vPvB = very Persistent and very Bioaccumulative.
LD50 = Lethal Dose 50%.

Additional information:
Classification according to Singapore Standard SS 586: Part 2 : 2014:
Calculation method.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature.

Made by DHI - Environment and Toxicology, Agern Allé 5, DK-2970 Hørsholm, Denmark.