

## CargoClean HD

### Wilhelmsen Ships Service AS

Part Number: 779104 (25 liter)

Version No: 5.23

Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: 28/02/2023

Print Date: 08/09/2023

L.REACH.NOR.EN

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

##### 1.1. Product Identifier

|                                      |  |
|--------------------------------------|--|
| <b>Product name</b>                  | CargoClean HD  |
| <b>Chemical Name</b>                 | Not Applicable   |
| <b>Synonyms</b>                      | Not Available  |
| <b>Proper shipping name</b>          | CAUSTIC ALKALI LIQUID, N.O.S. (contains potassium hydroxide) |
| <b>Chemical formula</b>              | Not Applicable   |
| <b>Other means of identification</b> | 779104 (25 liter), 779104                                    |

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

|                                  |  |
|----------------------------------|--|
| <b>Procedural Category</b>       | PROC7   Industrial spraying  |
| <b>Chemical Product Category</b> | PC35   Washing and cleaning products   |
| <b>Sectors of Use</b>            | SU22   Professional uses: Public domain (administration, education, entertainment, services, craftsmen)<br>SU3   Industrial uses: Uses of substances as such or in preparations* at industrial sites |
| <b>Relevant identified uses</b>  | Heavy duty alkaline cleaner  |
| <b>Uses advised against</b>      | No specific uses advised against are identified.   |

##### 1.3. Details of the manufacturer or supplier of the safety data sheet

|                                |   |   |   |
|--------------------------------|---|---|---|
| <b>Registered company name</b> | Wilhelmsen Ships Service AS   | <b>Outback (M)SDS portal:</b><br><a href="http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen">http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen</a>                  | <b>Wilhelmsen Ships Service AS*</b><br>Central Warehouse          |
| <b>Address</b>                 | Strandveien 20 Lysaker 1366<br>Norway                               | -----Use our Outback portal to obtain our (M)SDSs in other languages and/or format.----- For questions relating to our SDSs please use Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com<br>----- Norway | Willem Barentszstraat 50 Rotterdam<br>Netherlands                 |
| <b>Telephone</b>               | +47 67 58 40 00   | Not Available   | +31 10 4877 777   |
| <b>Fax</b>                     | Not Available   | Not Available   | Not Available   |
| <b>Website</b>                 | <a href="http://www.wilhelmsen.com/">http://www.wilhelmsen.com/</a> | <a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>   | <a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a> |
| <b>Email</b>                   | wss.norway.cs@wilhelmsen.com  | wss.global.sdsinfo@wilhelmsen.com   | wss.rotterdam@wilhelmsen.com                                      |
| <b>Registered company name</b> | Wilhelmsen Ships Service AS* Central Warehouse                      |   |   |
| <b>Address</b>                 | Willem Barentszstraat 50 Rotterdam Netherlands                      |   |   |

CargoClean HD

|           |   |
|-----------|---|
| Telephone | +31 10 4877 777   |
| Fax       | Not Available   |
| Website   | <a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a> |
| Email     | wss.rotterdam@wilhelmsen.com                                      |

#### 1.4. Emergency telephone number

| Association / Organisation        | Giftinformatjonssentralen - 24 timer | 24hrs - Chemwatch | Dutch nat. poison centre |
|-----------------------------------|--------------------------------------|-------------------|--------------------------|
| Emergency telephone numbers       | +47 22591300                         | +31-10-4877700    | + 31 88 7558561          |
| Other emergency telephone numbers | +31-10-4877700                       | +31-10-4877700    | + 31 10 4877700          |

| Association / Organisation        | Dutch nat. poison centre | CHEMWATCH EMERGENCY RESPONSE (24/7) |
|-----------------------------------|--------------------------|-------------------------------------|
| Emergency telephone numbers       | + 31 30 274 88 88        | +47 23 25 25 84                     |
| Other emergency telephone numbers | + 31-10-4877700          | +61 3 9573 3188                     |


Once connected and if the message is not in your preferred language then please dial 01

## SECTION 2 Hazards identification

### 2.1. Classification of the substance or mixture

|   |  |
|---|--|
| Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1] | H290 - Corrosive to Metals Category 1, H314 - Skin Corrosion/Irritation Category 1A              |
| Legend:   | 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

### 2.2. Label elements

|                     |   |
|---------------------|---|
| Hazard pictogram(s) |  |
| Signal word         | <b>Danger</b>   |

### Hazard statement(s)

|      |  |
|------|--|
| H290 | May be corrosive to metals.              |
| H314 | Causes severe skin burns and eye damage. |

### Supplementary statement(s)

|        |  |
|--------|--|
| EUH208 | Contains N,N-dimethyldecanamide. May produce an allergic reaction. |
|--------|--|

### Precautionary statement(s) General

|      |   |
|------|---|
| P101 | If medical advice is needed, have product container or label at hand. |
| P102 | Keep out of reach of children.  |
| P103 | Read carefully and follow all instructions.                           |

### Precautionary statement(s) Prevention

|      |  |
|------|--|
| P260 | Do not breathe mist/vapours/spray.   |
| P264 | Wash all exposed external body areas thoroughly after handling.                  |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P234 | Keep only in original packaging.   |

CargoClean HD

**Precautionary statement(s) Response**

|                       |  |
|-----------------------|--|
| <b>P301+P330+P331</b> | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.   |
| <b>P303+P361+P353</b> | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].                         |
| <b>P305+P351+P338</b> | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| <b>P310</b>           | Immediately call a POISON CENTER/doctor/physician/first aider.   |
| <b>P363</b>           | Wash contaminated clothing before reuse.   |
| <b>P390</b>           | Absorb spillage to prevent material damage.  |
| <b>P304+P340</b>      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |

**Precautionary statement(s) Storage**

|             |                  |
|-------------|------------------|
| <b>P405</b> | Store locked up. |
|-------------|------------------|

**Precautionary statement(s) Disposal**

|             |  |
|-------------|--|
| <b>P501</b> | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
|-------------|--|

**2.3. Other hazards**

|   |  |
|---|--|
| <b>hydrocarbons, C10-13-n-alkanes, isoalkanes, cyclics, &lt; 2% aromatics</b> | Determined to have endocrine-disrupting properties according to Europe Regulation (EU) 528/2012, Europe Regulation (EU) 2017/2100, and Europe Regulation (EU) 2018/605 |
|---|--|

**SECTION 3 Composition / information on ingredients**

**3.1.Substances**

See 'Composition on ingredients' in Section 3.2

**3.2.Mixtures**

| 1. CAS No<br>2.EC No<br>3.Index No<br>4.REACH No                         | %[weight] | Name  | Classification according to regulation (EC) No 1272/2008 [CLP] and amendments  | SCL / M-Factor   | Nanoform Particle Characteristics |
|--|-----------|---|--|--|-----------------------------------|
| 1. 1310-58-3<br>2.215-181-3<br>3.019-002-00-8<br>4.Not Available         | 1-5       | <u>potassium hydroxide</u>                                      | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1A; H302, H314 [2]  | Skin Corr. 1A; H314: C ≥ 5 %   Skin Corr. 1B; H314: 2 % ≤ C < 5 %   Skin Irrit. 2; H315: 0,5 % ≤ C < 2 %   Eye Irrit. 2; H319: 0,5 % ≤ C < 2 % | Not Available                     |
| 1. 10213-79-3<br>2.Not Available<br>3.014-010-00-8<br>4.Not Available    | 1-5       | <u>sodium metasilicate, pentahydrate</u>                        | Skin Corrosion/Irritation Category 1B, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3; H314, H335 [2]  | Not Available  | Not Available                     |
| 1. 1554325-20-0<br>2.Not Available<br>3.Not Available<br>4.Not Available | 1-5       | <u>C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated</u> | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1; H302, H315, H318, H400 [1] | Not Available  | Not Available                     |
| 1. 160875-66-1*<br>2.605-233-7<br>3.Not Available<br>4.Not Available     | 1-5       | <u>Fatty alcohol ethoxylates*</u>                               | Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Oral) Category 3; H318, H301 [1]   | 0  | Not Available                     |
| 1. 68891-38-3<br>2.500-234-8<br>3.Not Available<br>4.Not Available       | 1-5       | <u>sodium linear-(C12-14)alkyl ether sulfate</u>                | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2; H302, H315, H319 [1]   | Not Available  | Not Available                     |
| 1. 68155-07-7*<br>2.268-935-9  | 1-5       | <u>cocamide diethanolamide.</u>                                 | Skin Corrosion/Irritation Category 2, Hazardous to the Aquatic   | Not Available  | Not Available                     |

Continued...

## CargoClean HD

| 1. CAS No<br>2. EC No<br>3. Index No<br>4. REACH No                          | %[weight] | Name  | Classification according to regulation (EC) No 1272/2008 [CLP] and amendments  | SCL / M-Factor            | Nanoform Particle Characteristics |
|--|-----------|---|--|---------------------------|-----------------------------------|
| 3. Not Available<br>4. Not Available   |           |   | Environment Long-Term Hazard Category 2, Serious Eye Damage/Eye Irritation Category 1; H315, H411, H318 [1]  |                           |                                   |
| 1. 14433-76-2<br>2. 238-405-1<br>3. Not Available<br>4. Not Available        | 1-5       | <u>N,N-dimethyldecanamide</u>   | Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Sensitisation (Skin) Category 1, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 3; H315, H318, H317, H373, H412 [1] | Not Available             | Not Available                     |
| 1. Not Available<br>2. Not Available<br>3. Not Available<br>4. Not Available | 1-5       | <u>hydrocarbons, C10-13-n-alkanes, isoalkanes, cyclics, &lt; 2% aromatics</u> [e]   | Flammable Liquids Category 3, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Aspiration Hazard Category 1; H226, H336, H304 [1]   | Not Available             | Not Available                     |
| 1. 111-76-2<br>2. 203-905-0<br>3. 603-014-00-0<br>4. Not Available           | 1-5       | <u>ethylene glycol monobutyl ether</u> *  | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2; H302, H332, H315, H319 [2]   | oral: ATE = 1200 mg/kg bw | Not Available                     |
| <b>Legend:</b>   |           | 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties |  |                           |                                   |

## SECTION 4 First aid measures

## 4.1. Description of first aid measures

|                     |   |
|---------------------|---|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>  |
| <b>Skin Contact</b> | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately flush body and clothes with large amounts of water, using safety shower if available.</li> <li>▶ Quickly remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>  |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> <li>▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.</li> <li>▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> </ul> <p><b>This must definitely be left to a doctor or person authorised by him/her.</b><br/>(ICSC13719)</p> |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> </ul>   |

Continued...

- ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- ▶ Transport to hospital or doctor without delay.
- ▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

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

See Section 11

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

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For acute or short term repeated exposures to ethylene glycol:

- ▶ Early treatment of ingestion is important. Ensure emesis is satisfactory.
- ▶ Test and correct for metabolic acidosis and hypocalcaemia.
- ▶ Apply sustained diuresis when possible with hypertonic mannitol.
- ▶ Evaluate renal status and begin haemodialysis if indicated. [I.L.O]
- ▶ Rapid absorption is an indication that emesis or lavage is effective only in the first few hours. Cathartics and charcoal are generally not effective.
- ▶ Correct acidosis, fluid/electrolyte balance and respiratory depression in the usual manner. Systemic acidosis (below 7.2) can be treated with intravenous sodium bicarbonate solution.
- ▶ Ethanol therapy prolongs the half-life of ethylene glycol and reduces the formation of toxic metabolites.
- ▶ Pyridoxine and thiamine are cofactors for ethylene glycol metabolism and should be given (50 to 100 mg respectively) intramuscularly, four times per day for 2 days.
- ▶ Magnesium is also a cofactor and should be replenished. The status of 4-methylpyrazole, in the treatment regime, is still uncertain. For clearance of the material and its metabolites, haemodialysis is much superior to peritoneal dialysis.

[Ellenhorn and Barceloux: Medical Toxicology]

It has been suggested that there is a need for establishing a new biological exposure limit before a workshift that is clearly below 100 mmol ethoxy-acetic acids per mole creatinine in morning urine of people occupationally exposed to ethylene glycol ethers. This arises from the finding that an increase in urinary stones may be associated with such exposures.

*Laitinen J., et al: Occupational & Environmental Medicine 1996; 53, 595-600*

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- ▶ Oxygen is given as indicated.
- ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:

- ▶ Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.

- ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.

\* Catharsis and emesis are absolutely contra-indicated.

\* Activated charcoal does not absorb alkali.

\* Gastric lavage should not be used.

Supportive care involves the following:

- ▶ Withhold oral feedings initially.
- ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- ▶ Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

## SECTION 5 Firefighting measures

### 5.1. Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

### 5.2. Special hazards arising from the substrate or mixture

|                             |  |
|-----------------------------|--|
| <b>Fire Incompatibility</b> | <ul style="list-style-type: none"> <li>▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result</li> </ul> |
|-----------------------------|--|

### 5.3. Advice for firefighters

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>Do not approach containers suspected to be hot.</b></li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> </ul>  |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> <p>Combustion products include:</p> <ul style="list-style-type: none"> <li>, carbon dioxide (CO<sub>2</sub>)</li> <li>, other pyrolysis products typical of burning organic material.</li> </ul> <p>May emit corrosive fumes.</p> |

## SECTION 6 Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

See section 8

### 6.2. Environmental precautions

See section 12

### 6.3. Methods and material for containment and cleaning up

| <b>Minor Spills</b>                | <ul style="list-style-type: none"> <li>▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>▶ Check regularly for spills and leaks.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>   |              |            |                 |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
|------------------------------------|---|--------------|------------|-----------------|------------|-------------|--------------------|--|--|--|--|------------------------------------|---|--------|--------|--------|-------------------------------|---|-------|-----------|------------|----------------------------|---|--------|--------|---------|-----------------------|---|-------|-----------|---------------|---------------------------------|---|--------|--------|-----------------|----------------------------|---|--------|--------|---------------|---------------------|--|--|--|--|-----------------------------------|---|--------|------------|---------|----------------------------|---|--------|------------|---------|--------------------------------|---|--------|------------|----------------|-------------------------------|---|-------|------------|------------|----------------------------|---|--------|------------|--------------|-----------------------|---|-------|------------|----------------|
| <b>Major Spills</b>                | <p>Chemical Class: bases<br/>For release onto land: recommended sorbents listed in order of priority.</p> <table border="1"> <thead> <tr> <th>SORBENT TYPE</th> <th>RANK</th> <th>APPLICATION</th> <th>COLLECTION</th> <th>LIMITATIONS</th> </tr> </thead> <tbody> <tr> <td colspan="5">LAND SPILL - SMALL</td> </tr> <tr> <td>cross-linked polymer - particulate</td> <td>1</td> <td>shovel</td> <td>shovel</td> <td>R,W,SS</td> </tr> <tr> <td>cross-linked polymer - pillow</td> <td>1</td> <td>throw</td> <td>pitchfork</td> <td>R, DGC, RT</td> </tr> <tr> <td>sorbent clay - particulate</td> <td>2</td> <td>shovel</td> <td>shovel</td> <td>R, I, P</td> </tr> <tr> <td>foamed glass - pillow</td> <td>2</td> <td>throw</td> <td>pitchfork</td> <td>R, P, DGC, RT</td> </tr> <tr> <td>expanded minerals - particulate</td> <td>3</td> <td>shovel</td> <td>shovel</td> <td>R, I, W, P, DGC</td> </tr> <tr> <td>foamed glass - particulate</td> <td>4</td> <td>shovel</td> <td>shovel</td> <td>R, W, P, DGC,</td> </tr> <tr> <td colspan="5">LAND SPILL - MEDIUM</td> </tr> <tr> <td>cross-linked polymer -particulate</td> <td>1</td> <td>blower</td> <td>skidloader</td> <td>R,W, SS</td> </tr> <tr> <td>sorbent clay - particulate</td> <td>2</td> <td>blower</td> <td>skidloader</td> <td>R, I, P</td> </tr> <tr> <td>expanded mineral - particulate</td> <td>3</td> <td>blower</td> <td>skidloader</td> <td>R, I,W, P, DGC</td> </tr> <tr> <td>cross-linked polymer - pillow</td> <td>3</td> <td>throw</td> <td>skidloader</td> <td>R, DGC, RT</td> </tr> <tr> <td>foamed glass - particulate</td> <td>4</td> <td>blower</td> <td>skidloader</td> <td>R, W, P, DGC</td> </tr> <tr> <td>foamed glass - pillow</td> <td>4</td> <td>throw</td> <td>skidloader</td> <td>R, P, DGC., RT</td> </tr> </tbody> </table> <p>Legend</p> | SORBENT TYPE | RANK       | APPLICATION     | COLLECTION | LIMITATIONS | LAND SPILL - SMALL |  |  |  |  | cross-linked polymer - particulate | 1 | shovel | shovel | R,W,SS | cross-linked polymer - pillow | 1 | throw | pitchfork | R, DGC, RT | sorbent clay - particulate | 2 | shovel | shovel | R, I, P | foamed glass - pillow | 2 | throw | pitchfork | R, P, DGC, RT | expanded minerals - particulate | 3 | shovel | shovel | R, I, W, P, DGC | foamed glass - particulate | 4 | shovel | shovel | R, W, P, DGC, | LAND SPILL - MEDIUM |  |  |  |  | cross-linked polymer -particulate | 1 | blower | skidloader | R,W, SS | sorbent clay - particulate | 2 | blower | skidloader | R, I, P | expanded mineral - particulate | 3 | blower | skidloader | R, I,W, P, DGC | cross-linked polymer - pillow | 3 | throw | skidloader | R, DGC, RT | foamed glass - particulate | 4 | blower | skidloader | R, W, P, DGC | foamed glass - pillow | 4 | throw | skidloader | R, P, DGC., RT |
| SORBENT TYPE                       | RANK  | APPLICATION  | COLLECTION | LIMITATIONS     |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| LAND SPILL - SMALL                 |   |              |            |                 |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| cross-linked polymer - particulate | 1   | shovel       | shovel     | R,W,SS          |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| cross-linked polymer - pillow      | 1   | throw        | pitchfork  | R, DGC, RT      |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| sorbent clay - particulate         | 2   | shovel       | shovel     | R, I, P         |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| foamed glass - pillow              | 2   | throw        | pitchfork  | R, P, DGC, RT   |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| expanded minerals - particulate    | 3   | shovel       | shovel     | R, I, W, P, DGC |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| foamed glass - particulate         | 4   | shovel       | shovel     | R, W, P, DGC,   |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| LAND SPILL - MEDIUM                |   |              |            |                 |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| cross-linked polymer -particulate  | 1   | blower       | skidloader | R,W, SS         |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| sorbent clay - particulate         | 2   | blower       | skidloader | R, I, P         |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| expanded mineral - particulate     | 3   | blower       | skidloader | R, I,W, P, DGC  |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| cross-linked polymer - pillow      | 3   | throw        | skidloader | R, DGC, RT      |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| foamed glass - particulate         | 4   | blower       | skidloader | R, W, P, DGC    |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |
| foamed glass - pillow              | 4   | throw        | skidloader | R, P, DGC., RT  |            |             |                    |  |  |  |  |                                    |   |        |        |        |                               |   |       |           |            |                            |   |        |        |         |                       |   |       |           |               |                                 |   |        |        |                 |                            |   |        |        |               |                     |  |  |  |  |                                   |   |        |            |         |                            |   |        |            |         |                                |   |        |            |                |                               |   |       |            |            |                            |   |        |            |              |                       |   |       |            |                |

Continued...

DGC: Not effective where ground cover is dense  
 R: Not reusable  
 I: Not incinerable  
 P: Effectiveness reduced when rainy  
 RT: Not effective where terrain is rugged  
 SS: Not for use within environmentally sensitive sites  
 W: Effectiveness reduced when windy  
 Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;  
 R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.

#### 6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

### SECTION 7 Handling and storage

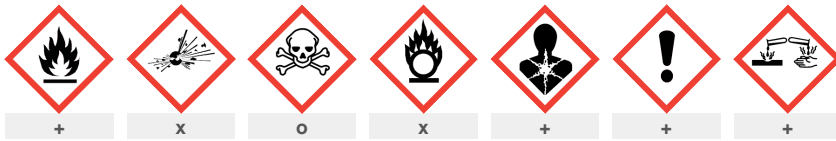
#### 7.1. Precautions for safe handling

|                                      |   |
|--------------------------------------|---|
| <b>Safe handling</b>                 | <ul style="list-style-type: none"> <li>▸ Avoid all personal contact, including inhalation.</li> <li>▸ Wear protective clothing when risk of exposure occurs.</li> <li>▸ Use in a well-ventilated area.</li> <li>▸ <b>WARNING: To avoid violent reaction, ALWAYS add material to water and NEVER water to material.</b></li> <li>▸ Avoid smoking, naked lights or ignition sources.</li> <li>▸ Avoid contact with incompatible materials.</li> <li>▸ When handling, <b>DO NOT eat, drink or smoke.</b></li> </ul>  |
| <b>Fire and explosion protection</b> | See section 5   |
| <b>Other information</b>             | <ul style="list-style-type: none"> <li>▸ Store in original containers.</li> <li>▸ Keep containers securely sealed.</li> <li>▸ Store in a cool, dry, well-ventilated area.</li> <li>▸ Store away from incompatible materials and foodstuff containers.</li> <li>▸ Protect containers against physical damage and check regularly for leaks.</li> <li>▸ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▸ <b>DO NOT store near acids, or oxidising agents</b></li> <li>▸ No smoking, naked lights, heat or ignition sources.</li> </ul> |

#### 7.2. Conditions for safe storage, including any incompatibilities

|  |  |
|--|--|
| <b>Suitable container</b>  | <ul style="list-style-type: none"> <li>▸ Lined metal can, lined metal pail/ can.</li> <li>▸ Plastic pail.</li> <li>▸ Polyliner drum.</li> <li>▸ Packing as recommended by manufacturer.</li> <li>▸ Check all containers are clearly labelled and free from leaks.</li> </ul> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>▸ Drums and jerricans must be of the non-removable head type.</li> <li>▸ Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> </ul> <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> <li>▸ Removable head packaging;</li> <li>▸ Cans with friction closures and</li> <li>▸ low pressure tubes and cartridges</li> </ul> <p>may be used.</p> <p>-</p> <p>Where combination packages are used, and the inner packages are of glass, porcelain or stoneware, there must be sufficient inert cushioning material in contact with inner and outer packages unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.</p> |
| <b>Storage incompatibility</b>   | <ul style="list-style-type: none"> <li>▸ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li> <li>▸ Avoid contact with copper, aluminium and their alloys.</li> <li>▸ Avoid reaction with oxidising agents</li> </ul>  |
| <b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b> | Not Available  |

|  |               |
|--|---------------|
| <b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b> | Not Available |
|--|---------------|



X — Must not be stored together

O — May be stored together with specific preventions

+ — May be stored together

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

### 7.3. Specific end use(s)

See section 1.2

## SECTION 8 Exposure controls / personal protection

### 8.1. Control parameters

| Ingredient                                | DNELs<br>Exposure Pattern Worker  | PNECs<br>Compartment  |
|---|---|---|
| potassium hydroxide                       | Inhalation 1 mg/m <sup>3</sup> (Local, Chronic)<br><i>Inhalation 1 mg/m<sup>3</sup> (Local, Chronic) *</i>  | Not Available   |
| sodium metasilicate, pentahydrate         | Dermal 1.49 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 6.22 mg/m <sup>3</sup> (Systemic, Chronic)<br>Inhalation 2 mg/m <sup>3</sup> (Local, Chronic)<br>Inhalation 2 mg/m <sup>3</sup> (Local, Acute)<br><i>Dermal 0.74 mg/kg bw/day (Systemic, Chronic) *</i><br><i>Inhalation 1.55 mg/m<sup>3</sup> (Systemic, Chronic) *</i><br><i>Oral 0.74 mg/kg bw/day (Systemic, Chronic) *</i>  | 7.5 mg/L (Water (Fresh))<br>1 mg/L (Water - Intermittent release)<br>7.5 mg/L (Water (Marine))<br>1000 mg/L (STP)   |
| sodium linear-(C12-14)alkyl ether sulfate | Dermal 2 750 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 7.9 mg/m <sup>3</sup> (Systemic, Chronic)<br>Dermal 132 µg/cm <sup>2</sup> (Local, Chronic)<br><i>Dermal 1 650 mg/kg bw/day (Systemic, Chronic) *</i><br><i>Inhalation 1.4 mg/m<sup>3</sup> (Systemic, Chronic) *</i><br><i>Oral 1.125 mg/kg bw/day (Systemic, Chronic) *</i><br><i>Dermal 79 µg/cm<sup>2</sup> (Local, Chronic) *</i>  | 0.052 mg/L (Water (Fresh))<br>0.024 mg/L (Water - Intermittent release)<br>0.071 mg/L (Water (Marine))<br>0.2 mg/kg sediment dw (Sediment (Fresh Water))<br>0.02 mg/kg sediment dw (Sediment (Marine))<br>7.5 mg/kg soil dw (Soil)<br>1 g/L (STP)                           |
| cocamide diethanolamide.                  | Dermal 0.75 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 11.5 mg/m <sup>3</sup> (Systemic, Chronic)<br><i>Dermal 89.3 µg/kg bw/day (Systemic, Chronic) *</i><br><i>Inhalation 2.03 mg/m<sup>3</sup> (Systemic, Chronic) *</i><br><i>Oral 1.17 mg/kg bw/day (Systemic, Chronic) *</i>  | 7 µg/L (Water (Fresh))<br>0.7 µg/L (Water - Intermittent release)<br>24 µg/L (Water (Marine))<br>0.23 mg/kg sediment dw (Sediment (Fresh Water))<br>23 µg/kg sediment dw (Sediment (Marine))<br>32 mg/kg soil dw (Soil)<br>830 mg/L (STP)                                   |
| N,N-dimethyldecanamide                    | Dermal 23.81 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 166.67 mg/m <sup>3</sup> (Systemic, Chronic)<br><i>Dermal 14.29 mg/kg bw/day (Systemic, Chronic) *</i><br><i>Inhalation 50 mg/m<sup>3</sup> (Systemic, Chronic) *</i><br><i>Oral 14.29 mg/kg bw/day (Systemic, Chronic) *</i>   | 28 µg/L (Water (Fresh))<br>2.8 µg/L (Water - Intermittent release)<br>77 µg/L (Water (Marine))<br>1.58 mg/kg sediment dw (Sediment (Fresh Water))<br>0.158 mg/kg sediment dw (Sediment (Marine))<br>10.6 mg/kg soil dw (Soil)<br>2.12 mg/L (STP)<br>12.71 mg/kg food (Oral) |
| ethylene glycol monobutyl ether           | Inhalation 98 mg/m <sup>3</sup> (Systemic, Chronic)<br>Inhalation 1 091 mg/m <sup>3</sup> (Systemic, Acute)<br>Inhalation 246 mg/m <sup>3</sup> (Local, Acute)<br><i>Inhalation 59 mg/m<sup>3</sup> (Systemic, Chronic) *</i><br><i>Oral 6.3 mg/kg bw/day (Systemic, Chronic) *</i><br><i>Inhalation 426 mg/m<sup>3</sup> (Systemic, Acute) *</i><br><i>Oral 26.7 mg/kg bw/day (Systemic, Acute) *</i><br><i>Inhalation 147 mg/m<sup>3</sup> (Local, Acute) *</i> | 8.8 mg/L (Water (Fresh))<br>0.88 mg/L (Water - Intermittent release)<br>26.4 mg/L (Water (Marine))<br>34.6 mg/kg sediment dw (Sediment (Fresh Water))<br>3.46 mg/kg sediment dw (Sediment (Marine))<br>2.33 mg/kg soil dw (Soil)<br>463 mg/L (STP)<br>0.02 g/kg food (Oral) |

\* Values for General Population



## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

| Source  | Ingredient                      | Material name   | TWA                           | STEL                           | Peak                | Notes         |
|---|---------------------------------|-----------------|-------------------------------|--------------------------------|---------------------|---------------|
| Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian) | potassium hydroxide             | Kaliumhydroksid | Not Available                 | Not Available                  | 2 mg/m <sup>3</sup> | Not Available |
| EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)  | ethylene glycol monobutyl ether | 2-Butoxyethanol | 20 ppm / 98 mg/m <sup>3</sup> | 246 mg/m <sup>3</sup> / 50 ppm | Not Available       | Skin          |
| Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian) | ethylene glycol monobutyl ether | 2-butoksyetanol | 10 ppm / 50 mg/m <sup>3</sup> | Not Available                  | Not Available       | HE            |

## Emergency Limits

| Ingredient                        | TEEL-1                 | TEEL-2               | TEEL-3                |
|-----------------------------------|------------------------|----------------------|-----------------------|
| potassium hydroxide               | 0.18 mg/m <sup>3</sup> | 2 mg/m <sup>3</sup>  | 54 mg/m <sup>3</sup>  |
| sodium metasilicate, pentahydrate | 6.6 mg/m <sup>3</sup>  | 73 mg/m <sup>3</sup> | 440 mg/m <sup>3</sup> |
| sodium metasilicate, pentahydrate | 3.8 mg/m <sup>3</sup>  | 42 mg/m <sup>3</sup> | 250 mg/m <sup>3</sup> |
| ethylene glycol monobutyl ether   | 60 ppm                 | 120 ppm              | 700 ppm               |

| Ingredient  | Original IDLH | Revised IDLH  |
|---|---------------|---------------|
| potassium hydroxide   | Not Available | Not Available |
| sodium metasilicate, pentahydrate                                   | Not Available | Not Available |
| C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated            | Not Available | Not Available |
| Fatty alcohol ethoxylates*  | Not Available | Not Available |
| sodium linear-(C12-14)alkyl ether sulfate                           | Not Available | Not Available |
| cocamide diethanolamide.  | Not Available | Not Available |
| N,N-dimethyldecanamide  | Not Available | Not Available |
| hydrocarbons, C10-13-n-alkanes, isoalkanes, cyclics, < 2% aromatics | Not Available | Not Available |
| ethylene glycol monobutyl ether                                     | 700 ppm       | Not Available |

## Occupational Exposure Banding

| Ingredient   | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|--|-----------------------------------|----------------------------------|
| sodium metasilicate, pentahydrate                        | E                                 | ≤ 0.01 mg/m <sup>3</sup>         |
| C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated | E                                 | ≤ 0.01 mg/m <sup>3</sup>         |
| Fatty alcohol ethoxylates*                               | E                                 | ≤ 0.1 ppm                        |

## Notes:

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

| Ingredient                                | Occupational Exposure Band Rating   | Occupational Exposure Band Limit |
|---|---|----------------------------------|
| sodium linear-(C12-14)alkyl ether sulfate | E   | ≤ 0.01 mg/m <sup>3</sup>         |
| cocamide diethanolamide.                  | E   | ≤ 0.1 ppm                        |
| N,N-dimethyldecanamide                    | E   | ≤ 0.01 mg/m <sup>3</sup>         |
| <b>Notes:</b>                             | <i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i> |                                  |

## MATERIAL DATA

for potassium hydroxide:

The TLV-TWA is protective against respiratory tract irritation produced at higher concentrations

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen

Jankovic J., Drake F.: A Screening Method for Occupational Reproductive

American Industrial Hygiene Association Journal 57: 641-649 (1996)

For ethylene glycol monobutyl ether (2-butoxyethanol)


Odour Threshold Value: 0.10 ppm (detection), 0.35 ppm (recognition)

Although rats appear to be more susceptible than other animals anaemia is not uncommon amongst humans following exposure. The TLV reflects the need to maintain exposures below levels found to cause blood changes in experimental animals. It is concluded that this limit will reduce the significant risk of irritation, haematologic effects and other systemic effects observed in humans and animals exposed to higher vapour concentrations. The toxic effects typical of some other glycol ethers (pancytopenia, testis atrophy and teratogenic effects) are not found with this substance.

Odour Safety Factor (OSF)

OSF=2E2 (2-BUTOXYETHANOL)

## 8.2. Exposure controls

|   |  |
|---|--|
| <b>8.2.1. Appropriate engineering controls</b>                                      | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p>   |
| <b>8.2.2. Individual protection measures, such as personal protective equipment</b> |   |
| <b>Eye and face protection</b>  | <ul style="list-style-type: none"> <li>▶ Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.</li> <li>▶ Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.</li> <li>▶ Alternatively a gas mask may replace splash goggles and face shields.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li> </ul> |
| <b>Skin protection</b>  | See Hand protection below  |
| <b>Hands/feet protection</b>  | <ul style="list-style-type: none"> <li>▶ Elbow length PVC gloves</li> <li>▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> </ul>  |
| <b>Body protection</b>  | See Other protection below   |
| <b>Other protection</b>   | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ PVC protective suit may be required if exposure severe.</li> <li>▶ Eyewash unit.</li> <li>▶ Ensure there is ready access to a safety shower.</li> </ul>  |

Recommended material(s)

Respiratory protection

Continued...

## CargoClean HD

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the

**computer-generated** selection:

CargoClean HD

| Material          | CPI |
|-------------------|-----|
| BUTYL             | A   |
| NEOPRENE          | B   |
| NITRILE           | B   |
| PVC               | B   |
| NAT+NEOPR+NITRILE | C   |
| NATURAL RUBBER    | C   |
| NATURAL+NEOPRENE  | C   |
| NITRILE+PVC       | C   |
| PE/EVAL/PE        | C   |
| PVA               | C   |
| SARANEX-23        | C   |

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator   |
|------------------------------------|----------------------|----------------------|--------------------------|
| up to 10 x ES                      | AK-AUS P2            | -                    | AK-PAPR-AUS / Class 1 P2 |
| up to 50 x ES                      | -                    | AK-AUS / Class 1 P2  | -                        |
| up to 100 x ES                     | -                    | AK-2 P2              | AK-PAPR-2 P2 ^           |

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

76ak-p()

## 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

## 9.1. Information on basic physical and chemical properties

| Appearance                                   | Yellow        |   |               |
|--|---------------|---|---------------|
| Physical state                               | Liquid        | Relative density (Water = 1)            | 1.030-1.055   |
| Odour  | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold                              | Not Available | Auto-ignition temperature (°C)          | Not Available |
| pH (as supplied)                             | >13           | Decomposition temperature (°C)          | Not Available |
| Melting point / freezing point (°C)          | Not Available | Viscosity (cSt)                         | Not Available |
| Initial boiling point and boiling range (°C) | 100           | Molecular weight (g/mol)                | Not Available |
| Flash point (°C)                             | Not Available | Taste                                   | Not Available |
| Evaporation rate                             | Not Available | Explosive properties                    | Not Available |
| Flammability                                 | Not Available | Oxidising properties                    | Not Available |
| Upper Explosive Limit (%)                    | Not Available | Surface Tension (dyn/cm or mN/m)        | Not Available |
| Lower Explosive Limit (%)                    | Not Available | Volatile Component (%vol)               | Not Available |
| Vapour pressure (kPa)                        | Not Available | Gas group                               | Not Available |

Continued...

|                                 |               |  |               |
|---------------------------------|---------------|--|---------------|
| <b>Solubility in water</b>      | Miscible      | <b>pH as a solution (1%)</b>             | Not Available |
| <b>Vapour density (Air = 1)</b> | Not Available | <b>VOC g/L</b>                           | Not Available |
| <b>Nanoform Solubility</b>      | Not Available | <b>Nanoform Particle Characteristics</b> | Not Available |
| <b>Particle Size</b>            | Not Available |  |               |

## 9.2. Other information

Not Available

## SECTION 10 Stability and reactivity

|   |  |
|---|--|
| <b>10.1.Reactivity</b>                          | See section 7.2  |
| <b>10.2. Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▸ Unstable in the presence of incompatible materials.</li> <li>▸ Product is considered stable.</li> <li>▸ Hazardous polymerisation will not occur.</li> </ul> |
| <b>10.3. Possibility of hazardous reactions</b> | See section 7.2  |
| <b>10.4. Conditions to avoid</b>                | See section 7.2  |
| <b>10.5. Incompatible materials</b>             | See section 7.2  |
| <b>10.6. Hazardous decomposition products</b>   | See section 5.3  |

## SECTION 11 Toxicological information

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

|                     |   |
|---------------------|---|
| <b>Inhaled</b>      | <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects.</p> <p>Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.</p> <p>Inhalation of alkaline corrosives may produce irritation of the respiratory tract with coughing, choking, pain and mucous membrane damage. Pulmonary oedema may develop in more severe cases; this may be immediate or in most cases following a latent period of 5-72 hours. Symptoms may include a tightness in the chest, dyspnoea, frothy sputum, cyanosis and dizziness. Findings may include hypotension, a weak and rapid pulse and moist rates.</p>  |
| <b>Ingestion</b>    | <p>Ingestion of alkaline corrosives may produce immediate pain, and circumoral burns. Mucous membrane corrosive damage is characterised by a white appearance and soapy feel; this may then become brown, oedematous and ulcerated. Profuse salivation with an inability to swallow or speak may also result. Even where there is limited or no evidence of chemical burns, both the oesophagus and stomach may experience a burning pain; vomiting and diarrhoea may follow. The vomitus may be thick and may be slimy (mucous) and may eventually contain blood and shreds of mucosa. Epiglottal oedema may result in respiratory distress and asphyxia. Marked hypotension is symptomatic of shock; a weak and rapid pulse, shallow respiration and clammy skin may also be evident.</p> <p>Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result.</p> <p>Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis).</p> <p>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.</p> |
| <b>Skin Contact</b> | <p>The material can produce severe chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.</p> <p>Skin contact with alkaline corrosives may produce severe pain and burns; brownish stains may develop. The corroded area may be soft, gelatinous and necrotic; tissue destruction may be deep.</p> <p>Anionic surfactants/ hydrotropes generally produce skin reactions following the removal of natural oils. The skin may appear red and may become sore. Papular dermatitis may also develop. Sensitive individuals may exhibit cracking, scaling and blistering. Open cuts, abraded or irritated skin should not be exposed to this material</p>  |

|                |   |
|----------------|---|
|                | Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.   |
| <b>Eye</b>     | Direct contact with alkaline corrosives may produce pain and burns. Oedema, destruction of the epithelium, corneal opacification and iritis may occur. In less severe cases these symptoms tend to resolve. In severe injuries the full extent of the damage may not be immediately apparent with late complications comprising a persistent oedema, vascularisation and corneal scarring, permanent opacity, staphyloma, cataract, symblepharon and loss of sight.<br>Direct eye contact with some concentrated anionic surfactants/ hydrotropes produces corneal damage, in some cases severe. Low concentrations may produce immediate discomfort, conjunctival hyperaemia, and oedema of the corneal epithelium. Healing may take several days. Temporary clouding of the cornea may occur.   |
| <b>Chronic</b> | Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis.<br>Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.<br>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.<br>Exposure to the material may cause concerns for human fertility, generally on the basis that results in animal studies provide sufficient evidence to cause a strong suspicion of impaired fertility in the absence of toxic effects, or evidence of impaired fertility occurring at around the same dose levels as other toxic effects, but which are not a secondary non-specific consequence of other toxic effects.<br>On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. |

| CargoClean HD   | TOXICITY   | IRRITATION  |
|---|--|---|
|   | Not Available  | Not Available   |
| <b>potassium hydroxide</b>  | Oral (Rat) LD50: 273 mg/kg <sup>[2]</sup>  | Eye (rabbit): 1mg/24h rinse-moderate<br>Skin (human): 50 mg/24h SEVERE<br>Skin (rabbit): 50 mg/24h SEVERE             |
| <b>sodium metasilicate, pentahydrate</b>                                      | Oral (Rat) LD50: 1153 mg/kg <sup>[2]</sup>   | Skin (human): 250 mg/24h SEVERE<br>Skin (rabbit): 250 mg/24h SEVERE   |
| <b>C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated</b>               | Oral (Rat) LD50: >300 mg/kg <sup>[2]</sup>   | Not Available   |
| <b>Fatty alcohol ethoxylates*</b>   | Dermal (Other) LD50: >2000 mg/kg <sup>[2]</sup><br>Oral (Rat) LD50: >300-2000 mg/kg <sup>[2]</sup>   | Not Available   |
| <b>sodium linear-(C12-14)alkyl ether sulfate</b>                              | dermal (rat) LD50: >=2000 mg/kg <sup>[1]</sup><br>Oral (Rat) LD50: >540 mg/kg <sup>[1]</sup>   | Eye: adverse effect observed (irritating) <sup>[1]</sup><br>Skin: adverse effect observed (irritating) <sup>[1]</sup> |
| <b>cocamide diethanolamide.</b>   | dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup><br>Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>   | Not Available   |
| <b>N,N-dimethyldecanamide</b>   | dermal (rat) LD50: >2000 mg/kg <sup>[2]</sup><br>Inhalation(Rat) LC50: >3.551 mg/L4h <sup>[1]</sup><br>Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup> | Not Available   |
| <b>hydrocarbons, C10-13-n-alkanes, isoalkanes, cyclics, &lt; 2% aromatics</b> | Not Available  | Not Available   |
| <b>ethylene glycol monobutyl ether</b>  | Not Available  | Not Available   |

|  |  |  |
|--|--|--|
|  | dermal (guinea pig) LD50: 210 mg/kg <sup>[2]</sup> | Eye (rabbit): 100 mg SEVERE * [Union Carbide]                    |
|  | Inhalation(Rat) LC50: 450 ppm4h <sup>[2]</sup>     | Eye (rabbit): 100 mg/24h-moderate                                |
|  | Oral (Rat) LD50: 250 mg/kg <sup>[2]</sup>          | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |
|  |  | Skin (rabbit): 500 mg, open; mild                                |
|  |  | Skin: adverse effect observed (irritating) <sup>[1]</sup>        |
|  |  | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |

**Legend:**

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

|   |  |
|---|--|
| <b>POTASSIUM HYDROXIDE</b>                                      | <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.</p> <p>Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.</p>  |
| <b>SODIUM METASILICATE, PENTAHYDRATE</b>                        | <p>sodium metasilicate anhydrous:</p> <p>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.</p> <p>Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).</p> <p>The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs. Therefore prolonged exposure to respiratory irritants may cause sustained breathing difficulties.</p>  |
| <b>C12-14-ALKYL(HYDROXYETHYL)DIMETHYL CHLORIDE, ETHOXYLATED</b> | <p>* SDS for Berol R648 NG (70% aqueous solution)</p> <p>No specific data describing the health effects of cationic dialkyldimethylammonium (DADMA - dimonium) salts are readily available. However, many of the properties described for alkyltrimethylammonium (ATMA) salts also apply to DADMA salts, although these are generally less irritating than the corresponding ATMA salts</p> <p><b>For alkyltrimethylammonium chloride (ATMAC)</b></p> <p>Most undiluted cationic surfactants satisfy the criteria for classification as Harmful (Xn) with R22 and as Irritant (Xi) for skin and eyes with R38 and R41. In addition, certain surfactants will satisfy the criteria for classification as Corrosive with R34 in addition to the acute toxicity.</p> <p>According to Centre Europeen des Agents de Surface et de leurs Intermediaires Organiques (CESIO), C8-18 alkyltrimethylammonium chloride (ATMAC) (i.e., lauryl, coco, soya, and tallow) are classified as Corrosive (C) with the risk phrases R22 (Harmful if swallowed) and R34 (Causes burns). C16 ATMAC is classified as Harmful (Xn) with the risk phrases R22 (Harmful if swallowed), R38 (Irritating to skin), and R41 (Risk of serious damage to eyes). C20-22 ATMAC are classified as Irritant (Xi) with R36/38 (Irritating to eyes and skin).</p> <p><b>Toxokinetics and Acute Toxicity:</b> The few available absorption studies conducted with cationic surfactants indicate that absorption occurs in small amounts through the skin. Percutaneous absorption of radiolabelled C12 alkyltrimethylammonium bromide (ATMAB) in 3% aqueous solution (applied to an 8 cm<sup>2</sup> area with occlusion) in the rat was low and corresponded to 0.6% of the applied 14C activity in 72 hours. Most of the absorbed surfactant was excreted in the urine, i.e. 0.35% of the applied 14C activity within the first 24 hours, whereas 13.2% remained on the skin after rinsing. Cutaneous application of the surfactant without rinsing resulted in a greater degree of percutaneous absorption (3.15%) in 48 hours.</p> |
| <b>Fatty alcohol ethoxylates*</b>                               | <p>Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units:</p> <p>EO &lt; 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes)</p> <p>EO &gt; 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41</p> <p>EO &gt; 15-20 gives Harmful (Xn) with R22-41</p> <p>&gt;20 EO is not classified (CESIO 2000)</p> <p>Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin) .</p> <p>AE are not included in Annex 1 of the list of dangerous substances of the Council Directive 67/548/EEC</p> <p>In general, alcohol ethoxylates (AE) are readily absorbed through the skin of guinea pigs and rats and through the gastrointestinal mucosa of rats. AE are quickly eliminated from the body through the urine, faeces, and expired air (CO<sub>2</sub>). Orally dosed AE was absorbed rapidly and extensively in rats, and more than 75% of the dose was absorbed. When applied to the skin of humans, the doses were absorbed slowly and incompletely (50% absorbed in 72 hours). Half of the absorbed surfactant was excreted promptly in the urine and smaller amounts of AE appeared in the faeces and expired air (CO<sub>2</sub>). The metabolism of C12 AE yields PEG, carboxylic acids, and CO<sub>2</sub> as metabolites. The LD50 values after oral administration to rats range from about 1-15 g/kg body weight indicating a low to moderate acute</p>  |

|   |   |
|---|---|
|   | <p>toxicity.</p> <p>The ability of nonionic surfactants to cause a swelling of the stratum corneum of guinea pig skin has been studied. The swelling mechanism of the skin involves a combination of ionic binding of the hydrophilic group as well as hydrophobic interactions of the alkyl chain with the substrate.</p>  |
| <p><b>SODIUM LINEAR-(C12-14)ALKYL ETHER SULFATE</b></p> | <p>Alkyl ether sulfates (alcohol or alkyl ethoxysulfates) (AES) (syn: AAASD ,alkyl alcohol alkoxyolate sulfates, SLES) are generally classified according to Comité Européen des Agents de Surface et leurs Intermédiaires Organiques (CESIO) as Irritant (Xi) with the risk phrases R38 (Irritating to skin) and R36 (Irritating to eyes). An exception has been made for AES (2-3E0) in a concentration of 70-75% where R36 is substituted with R41 (Risk of serious damage to eyes). AES are not included in Annex 1 of the list of dangerous substances of Council Directive 67/548/EEC.</p> <p>In assessing this family the Cosmetic Ingredient Review (CIR) Expert Panel recognized that most of the acute oral toxicity, dermal irritation and sensitization, subchronic and chronic oral toxicity, reproductive and developmental toxicity, carcinogenicity, and photosensitization studies have been conducted on ammonium laureth sulfate and sodium laureth sulfate. Sodium and ammonium laureth sulfate have not evoked adverse responses in any toxicological testing, including acute oral toxicity, sub-chronic and chronic oral toxicity, reproductive and develop-mental toxicity, carcinogenicity, and photosensitization studies. These data, however, are considered a sufficient basis for concluding that the other ingredients are safe in the practices of use and concentration described in the safety assessment because of the fundamental chemical similarities between them and because they all are chemically similar salts(salts are expected to be dissociated in any product formulation independent of whether the salt is sodium, ammonium, magnesium, or zinc) of sulfated ethoxylated alcohols, and they all function as surfactants in cosmetic formulations. Based on these considerations, safety test data on one ingredient may be extrapolated to all of them. The panel noted that sodium laureth sulfate and ammonium laureth sulfate can produce eye and/or skin irritation in experimental animals and in some human test subjects; irritation may occur in some users of cosmetic formulations containing these ingredients. The irritant effects, however, are similar to those produced by other detergents, and the severity of the irritation appears to increase directly with concentration</p> <p><b>Acute toxicity:</b> AES are of low acute toxicity.</p>  |
| <p><b>cocamide diethanolamide.</b></p>                  | <p>Coconut oil diethanolamine condensate is possibly carcinogenic to humans (IARC Group 2B)</p> <p>In a study of the dermal application in mice, coconut oil diethanolamine condensate increased the incidence of hepatocellular carcinoma and hepatocellular adenoma in males and females, and of hepatoblastoma in males. The incidence of renal tubule adenoma and carcinoma combined was also increased in males. In a study of dermal application in rats, no increase in tumour incidence was observed.</p> <p>Tumours of the kidney and hepatoblastoma are rare spontaneous neoplasms in experimental animals.</p> <p>The amide linkage between diethanolamine and of the fatty acid moiety is resistant to metabolic hydrolysis. The carcinogenic effects of the coconut diethanolamine condensate used in the cancer bioassay may be due to the levels of diethanolamine (18.2%) in the solutions tested. Mechanistic data are very weak to evaluate the carcinogenic potential of coconut oil diethanolamine condensate per se.</p> <p>A test material composed primarily of diethanolamides of coconut oil acids, with unreacted diethanolamine, alkanolamides of unsaturated acids, and amine salts of the acids, was evaluated. The polar nitrosamine, N-nitrosodiethanolamine, was detected at a concentration of 219 ppb</p> <p>Under test conditions, there was no evidence of carcinogenic activity of the test material in male rats administered 50 or 100 mg/kg bw. There was an equivocal evidence of carcinogenic activity in female rats based on a marginal increase in the incidences of renal tubule neoplasms.</p> <p>for diethanolamine (DEA):</p> <p>In animal studies, DEA has low acute toxicity via the oral and dermal routes with moderate skin irritation and severe eye irritation. In subchronic toxicity testing conducted via the oral route in rats and mice, the main effects observed were increased organ weights and histopathology of the kidney and/or liver, with the majority of other tissue effects noted only at relatively high dosages. In subchronic studies conducted via the dermal route, skin irritation was noted as well as systemic effects similar to those observed in the oral studies. DEA has not been shown to be mutagenic or carcinogenic in rats; however, there is evidence of its carcinogenicity in mice.</p> <p><b>Subchronic toxicity:</b> The subchronic toxicity of DEA has been studied in F344 rats and B6C3F1 mice by exposure through drinking water or dermal administration, in 2 week and 13 week studies.</p> <p>Target organs for toxicity included blood, kidney, brain and spinal cord, seminiferous tubules and dermal application site in rats and liver, kidney, heart, salivary gland and dermal application site in mice. Effects on seminiferous tubules were accompanied by reductions in sperm count and reduced sperm motility Hematological evaluations indicated normochromic, microcytic anemia in the dermal study in male rats (NOEL =32 mg/g) and females (LOEL = 32 mg/kg). Anemia was also observed in rats in the drinking water study with a LOEL of 14 mg/kg/d in females and a LOEL of 48 mg/kg/d in males for altered hematological parameters. These findings were similar to those observed in the 2 week studies, but the magnitude of the changes was greater in the 13 week studies.</p> <p><b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.</p> |
| <p><b>N,N-DIMETHYLDECANAMIDE</b></p>                    | <p>Toxicity test were performed with a mixture of N,N-dimethyldecanamide and N,N-dimethyloctanamide (with traces of N,N-dimethyl-dodecanamide and N,N-dimethyl-hexanamide). Due to the fact that a high amount in the mixture was N,N-dimethyloctanamide and the rest of the mixture are homologues with a lower and higher molecular weight which can be assumed to have a similar toxicological behaviour it is concluded that the mixture has nearly an similar toxicological behaviour like pure N,N-dimethyloctanamide. A 90 days repeated dose studies with a mixture of a mixture of N,N-dimethyldecanamide and N,N-dimethyloctanamide in beagle dogs via gavage (40, 200 and 1000 mg/kg bw/d) reported no relevant findings regarding the male or female fertility/developmental toxicity . It is assumed that a reproductive screening study or two generation study does not need to be conducted as results from a developmental toxicity study and a subchronic toxicity study did not reveal any reason of concern for offspring and for parent animals with respect to developmental toxicity or fertility. There were no hints for gene mutation or cytogenicity from in vitro genotoxicity test performed with the pure N,N-Dimethyloctanamide or from a mixture of N,N-Dimethyldecanamide</p>  |

|  |  |
|--|--|
|  | and/or N,N-Dimethyloctanamide (with traces of N,N-dimethyldodecanamide and N,N-dimethylhexanamide). * REACH Dossier  |
| <p><b>HYDROCARBONS, C10-13-N-ALKANES, ISOALKANES, CYCLICS, &lt; 2% AROMATICS</b></p>   | <p>Studies indicate that normal, branched and cyclic paraffins are absorbed from the mammalian gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.</p> <p>The major classes of hydrocarbons have been shown to be well absorbed by the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with dietary lipids. The dependence of hydrocarbon absorption on concomitant triglyceride digestion and absorption, is known as the "hydrocarbon continuum hypothesis", and asserts that a series of solubilising phases in the intestinal lumen, created by dietary triglycerides and their digestion products, afford hydrocarbons a route to the lipid phase of the intestinal absorptive cell (enterocyte) membrane. While some hydrocarbons may traverse the mucosal epithelium unmetabolised and appear as solutes in lipoprotein particles in intestinal lymph, there is evidence that most hydrocarbons partially separate from nutrient lipids and undergo metabolic transformation in the enterocyte. The enterocyte may play a major role in determining the proportion of an absorbed hydrocarbon that, by escaping initial biotransformation, becomes available for deposition in its unchanged form in peripheral tissues such as adipose tissue, or in the liver.</p> <p>For alkanes:</p> <p>Exposure to the commercial hexane (a representative of the ECHA group of hydrocarbons, C5-C7, n-alkanes, isoalkanes, n-hexane rich) had no effect on the behavior of rats. Rats were tested monthly throughout the exposure for hindlimb splay and grip strength. The NOAEC for sub-chronic neurological effects is 9000 ppm in rats.</p> <p>In a 13 week subchronic inhalation study, the neurotoxicity of light alkylate naphtha distillate (LAND-2; carbon range C5-C8) was examined in male and female rats and aside from acute CNS effects, no treatment related neurotoxic effects found in any of the treatment groups. The NOAEC was determined to be &gt; 24.3 g/m<sup>3</sup> (6646 ppm). Additionally, no neurological effects were reported in the NTP 2 year carcinogenicity study on Stoddard solvent.</p> <p>For hydrocarbons, C5-C7, n-alkanes, isoalkanes, n-hexane rich</p> <p>n-Hexane was metabolized and excreted within 168 h of iv bolus administration, inhalation exposure or dermal application. Exhaled breath and urine were the two primary routes for the excretion and its metabolites. n-Hexane was widely distributed to the body tissues but were not concentrated significantly by any of those tissues.</p>   |
| <p><b>ETHYLENE GLYCOL MONOBUTYL ETHER</b></p>  | <p>NOTE: Changes in kidney, liver, spleen and lungs are observed in animals exposed to high concentrations of this substance by all routes. ** ASCC (NZ) SDS</p> <p>For ethylene glycol monoalkyl ethers and their acetates (EGMAEs):</p> <p>Typical members of this category are ethylene glycol propylene ether (EGPE), ethylene glycol butyl ether (EGBE) and ethylene glycol hexyl ether (EGHE) and their acetates.</p> <p>EGMAEs are substrates for alcohol dehydrogenase isozyme ADH-3, which catalyzes the conversion of their terminal alcohols to aldehydes (which are transient metabolites). Further, rapid conversion of the aldehydes by aldehyde dehydrogenase produces alkoxyacetic acids, which are the predominant urinary metabolites of mono substituted glycol ethers.</p> <p><b>Acute Toxicity:</b> Oral LD50 values in rats for all category members range from 739 (EGHE) to 3089 mg/kg bw (EGPE), with values increasing with decreasing molecular weight. Four to six hour acute inhalation toxicity studies were conducted for these chemicals in rats at the highest vapour concentrations practically achievable. Values range from LC0 &gt; 85 ppm (508 mg/m<sup>3</sup>) for EGHE, LC50 &gt; 400ppm (2620 mg/m<sup>3</sup>) for EGBEA to LC50 &gt; 2132 ppm (9061 mg/m<sup>3</sup>) for EGPE. No lethality was observed for any of these materials under these conditions. Dermal LD50 values in rabbits range from 435 mg/kg bw (EGBE) to 1500 mg/kg bw (EGBEA). Overall these category members can be considered to be of low to moderate acute toxicity.</p> <p>Exposure of pregnant rats to ethylene glycol monobutyl ether (2-butoxyethanol) at 100 ppm or rabbits at 200 ppm during organogenesis resulted in maternal toxicity and embryotoxicity including a decreased number of viable implantations per litter. Slight foetotoxicity in the form of poorly ossified or unossified skeletal elements was also apparent in rats. Teratogenic effects were not observed in other species.</p> <p>At least one researcher has stated that the reproductive effects were less than that of other monoalkyl ethers of ethylene glycol.</p> <p>Chronic exposure may cause anaemia, macrocytosis, abnormally large red cells and abnormal red cell fragility.</p> <p>Exposure of male and female rats and mice for 14 weeks to 2 years produced a regenerative haemolytic anaemia and subsequent effects on the haemopoietic system in rats and mice. In addition, 2-butoxyethanol exposures caused increases in the incidence of neoplasms and nonneoplastic lesions (1). The occurrence of the anaemia was concentration-dependent and more pronounced in rats and females. In this study it was proposed that 2-butoxyethanol at concentrations of 500 ppm and greater produced an acute disseminated thrombosis and bone infarction in male and female rats as a result of severe acute haemolysis and reduced deformability of erythrocytes or through anoxic damage to endothelial cells that compromise blood flow. In two-year studies, 2-butoxyethanol continued to affect circulating erythroid mass, inducing a responsive anaemia.</p> |
| <p><b>CargoClean HD &amp; POTASSIUM HYDROXIDE &amp; SODIUM METASILICATE, PENTAHYDRATE &amp; C12-14-ALKYL(HYDROXYETHYL)DIMETHYL CHLORIDE, ETHOXYLATED &amp; cocamide diethanolamide. &amp; N,N-DIMETHYLDECANAMIDE</b></p> | <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p>   |



|   |   |
|---|---|
| <p><b>SODIUM METASILICATE, PENTAHYDRATE &amp; cocamide diethanolamide. &amp; ETHYLENE GLYCOL MONOBUTYL ETHER</b></p>  | <p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p>   |
| <p><b>C12-14-ALKYL(HYDROXYETHYL)DIMETHYL CHLORIDE, ETHOXYLATED &amp; SODIUM LINEAR-(C12-14)ALKYL ETHER SULFATE</b></p>  | <p>Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air.</p> <p>Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol ) was stable enough to be isolated. It was found to be a strong sensitizer in LLNA (local lymph node assay for detection of sensitization capacity). The formation of other hydroperoxides was indicated by the detection of their corresponding aldehydes in the oxidation mixture .</p> <p>On the basis of the lower irritancy, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their susceptibility towards autoxidation also increases the irritation. Because of their irritating effect, it is difficult to diagnose ACD to these compounds by patch testing.</p> <p>Allergic Contact Dermatitis—Formation, Structural Requirements, and Reactivity of Skin Sensitizers. Ann-Therese Karlberg et al; Chem.</p>  |
| <p><b>SODIUM LINEAR-(C12-14)ALKYL ETHER SULFATE &amp; cocamide diethanolamide. &amp; HYDROCARBONS, C10-13-N-ALKANES, ISOALKANES, CYCLICS, &lt; 2% AROMATICS</b></p> | <p>No significant acute toxicological data identified in literature search.</p>   |
| <p><b>cocamide diethanolamide. &amp; N,N-DIMETHYLDECANAMIDE</b></p>   | <p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p> <p>Fatty acid amides (FAA) are ubiquitous in household and commercial environments. The most common of these are based on coconut oil fatty acids alkanolamides. These are the most widely studied in terms of human exposure.</p> <p>Fatty acid diethanolamides (C8-C18) are classified by Comité Européen des Agents de Surface et de leurs Intermediaires Organiques (CESIO) as Irritating (Xi) with the risk phrases R38 (Irritating to skin) and R41 (Risk of serious damage to eyes). Fatty acid monoethanolamides are classified as Irritant (Xi) with the risk phrases R41</p> <p>Several studies of the sensitization potential of cocoamide diethanolamide (DEA) indicate that this FAA induces occupational allergic contact dermatitis and a number of reports on skin allergy patch testing of cocoamide DEA have been published. These tests indicate that allergy to cocoamide DEA is becoming more common.</p> <p>Alkanolamides are manufactured by condensation of diethanolamine and the methylester of long chain fatty acids. Several alkanolamides (especially secondary alkanolamides) are susceptible to nitrosamine formation which constitutes a potential health problem. Nitrosamine contamination is possible either from pre-existing contamination of the diethanolamine used to manufacture cocoamide DEA, or from nitrosamine formation by nitrosating agents in formulations containing cocoamide DEA.</p> <p>For Fatty Nitrogen Derived (FND) Amides (including several high molecular weight alkyl amino acid amides)</p> <p>The chemicals in the Fatty Nitrogen Derived (FND) Amides of surfactants are similar to the class in general as to physical/chemical properties, environmental fate and toxicity. Human exposure to these chemicals is substantially documented.</p> <p>The Fatty nitrogen-derived amides (FND amides) comprise four categories:</p> <p>Subcategory I: Substituted Amides</p> <p>Subcategory II: Fatty Acid Reaction Products with Amino Compounds (Note: Subcategory II chemicals, in many cases, contain Subcategory I chemicals as major components)</p> <p>Subcategory III: Imidazole Derivatives</p> <p>Subcategory IV: FND Amphoterics</p> <p>Acute Toxicity: The low acute oral toxicity of the FND Amides is well established across all Subcategories by the available data. The limited acute toxicity of these chemicals is also confirmed by four acute dermal and two acute inhalation studies.</p> <p>Repeated Dose and Reproductive Toxicity: Two subchronic toxicity studies demonstrating low toxicity are available for Subcategory I chemicals. In addition, a 5-day repeated dose study for a third chemical confirmed the minimal toxicity of these chemicals. Since the Subcategory I chemicals are major components of many Subcategory II chemicals, and based on the low repeat-dose toxicity of the amino compounds (e.g. diethanolamine, triethanolamine) used for producing the Subcategory II derivatives, the Subcategory I repeat-dose toxicity studies adequately support Subcategory II.</p> <p>Two subchronic toxicity studies in Subcategory III confirmed the low order of repeat dose toxicity for the FND Amides</p> |

|   |  |
|---|--|
|   | Imidazole derivatives. For Subcategory IV, two subchronic toxicity studies for one of the chemicals indicated a low order of repeat-dose toxicity for the FND amphoteric salts similar to that seen in the other categories.<br>Genetic Toxicity in vitro: Based on the lack of effect of one or more chemicals in each subcategory, adequate data for mutagenic activity as measured by the Salmonella reverse mutation assay exist for all of the subcategories.<br>Developmental Toxicity: A developmental toxicity study in Subcategory I and in Subcategory IV and a third study for a chemical in Subcategory III are available. The studies indicate these chemicals are not developmental toxicants, as expected based on their structures, molecular weights, physical properties and knowledge of similar chemicals. |
| <b>cocamide diethanolamide. &amp; ETHYLENE GLYCOL MONOBUTYL ETHER</b> | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.   |

|                                   |   |                          |   |
|-----------------------------------|---|--------------------------|---|
| Acute Toxicity                    | ✗ | Carcinogenicity          | ✗ |
| Skin Irritation/Corrosion         | ✓ | Reproductivity           | ✗ |
| Serious Eye Damage/Irritation     | ✗ | STOT - Single Exposure   | ✗ |
| Respiratory or Skin sensitisation | ✗ | STOT - Repeated Exposure | ✗ |
| Mutagenicity                      | ✗ | Aspiration Hazard        | ✗ |

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## 11.2 Information on other hazards

### 11.2.1. Endocrine disrupting properties

Many chemicals may mimic or interfere with the body's hormones, known as the endocrine system. Endocrine disruptors are chemicals that can interfere with endocrine (or hormonal) systems. Endocrine disruptors interfere with the synthesis, secretion, transport, binding, action, or elimination of natural hormones in the body. Any system in the body controlled by hormones can be derailed by hormone disruptors. Specifically, endocrine disruptors may be associated with the development of learning disabilities, deformations of the body various cancers and sexual development problems. Endocrine disrupting chemicals cause adverse effects in animals. But limited scientific information exists on potential health problems in humans. Because people are typically exposed to multiple endocrine disruptors at the same time, assessing public health effects is difficult.

### 11.2.2. Other information

See Section 11.1

## SECTION 12 Ecological information

### 12.1. Toxicity

| CargoClean HD  | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|--|---------------|--------------------|-------------------------------|-----------------|---------------|
|  | Not Available | Not Available      | Not Available                 | Not Available   | Not Available |
| potassium hydroxide                                      | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | LC50          | 96h                | Fish                          | 80mg/l          | 2             |
|  | NOEC(ECx)     | 24h                | Fish                          | 28mg/l          | 2             |
| sodium metasilicate, pentahydrate                        | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | EC50          | 72h                | Algae or other aquatic plants | 207mg/l         | 2             |
|  | EC50          | 48h                | Crustacea                     | 22.94-49.01mg/l | 4             |
|  | LC50          | 96h                | Fish                          | 180mg/l         | 1             |
|  | EC50(ECx)     | 48h                | Crustacea                     | 22.94-49.01mg/l | 4             |
| C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |
|  | EC50          | 48h                | Crustacea                     | >1-10mg/l       | Not Available |
|  | LC50          | 96h                | Fish                          | >10-100mg/l     | Not Available |
|  | EC50(ECx)     | 48h                | Crustacea                     | >1-10mg/l       | Not Available |
| Fatty alcohol ethoxylates*                               | Endpoint      | Test Duration (hr) | Species                       | Value           | Source        |

Continued...

## CargoClean HD

|   |  |                           |  |               |               |
|---|--|---------------------------|--|---------------|---------------|
|   | EC50   | 48                        | Crustacea Daphnia magna                            | >10-100mg/L   | 8             |
|   | EC50   | 72                        | Algae/Plant Pseudokirchneriella subcapitata(Algae) | >10-100mg/L   | 8             |
|   | LC50   | 96                        | Fish Other   | >10-100mg/L   | 8             |
| sodium linear-(C12-14)alkyl ether sulfate                           | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                                     | <b>Value</b>  | <b>Source</b> |
|   | EC50   | 72h                       | Algae or other aquatic plants                      | 1.8mg/l       | 2             |
|   | EC50   | 48h                       | Crustacea  | 7.4mg/l       | 2             |
|   | EC50   | 96h                       | Algae or other aquatic plants                      | 7.5mg/l       | 2             |
|   | LC50   | 96h                       | Fish   | >1<10mg/l     | 2             |
|   | NOEC(ECx)  | 672h                      | Fish   | 0.14mg/l      | 2             |
| cocamide diethanolamide.  | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                                     | <b>Value</b>  | <b>Source</b> |
|   | EC50   | 48h                       | Crustacea  | ~3.2mg/l      | 2             |
|   | LC50   | 96h                       | Fish   | ~2.4mg/l      | 2             |
|   | NOEC(ECx)  | 504h                      | Crustacea  | ~0.1mg/l      | 2             |
|   | EC50   | 72h                       | Algae or other aquatic plants                      | ~2.1mg/l      | 2             |
| N,N-dimethyldecanamide  | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                                     | <b>Value</b>  | <b>Source</b> |
|   | EC50   | 72h                       | Algae or other aquatic plants                      | 0.805mg/l     | 2             |
|   | EC50   | 48h                       | Crustacea  | 0.29mg/l      | 2             |
|   | LC50   | 96h                       | Fish   | >0.88mg/l     | 2             |
|   | NOEC(ECx)  | 504h                      | Crustacea  | 0.079mg/l     | 2             |
| hydrocarbons, C10-13-n-alkanes, isoalkanes, cyclics, < 2% aromatics | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                                     | <b>Value</b>  | <b>Source</b> |
|   | Not Available  | Not Available             | Not Available                                      | Not Available | Not Available |
| ethylene glycol monobutyl ether                                     | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                                     | <b>Value</b>  | <b>Source</b> |
|   | EC50   | 72h                       | Algae or other aquatic plants                      | 623mg/l       | 2             |
|   | EC50   | 48h                       | Crustacea  | 164mg/l       | 2             |
|   | EC50   | 96h                       | Algae or other aquatic plants                      | 720mg/l       | 2             |
|   | LC50   | 96h                       | Fish   | 1700mg/l      | Not Available |
|   | EC10(ECx)  | 48h                       | Crustacea  | 7.2mg/l       | 2             |
| <b>Legend:</b>  | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data |                           |  |               |               |

Toxic to aquatic organisms.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For Surfactants: Kow cannot be easily determined due to hydrophilic/hydrophobic properties of the molecules in surfactants. BCF value: 1-350.

Aquatic Fate: Surfactants tend to accumulate at the interface of the air with water and are not extracted into one or the other liquid phases.

Terrestrial Fate: Anionic surfactants are not appreciably sorbed by inorganic solids. Cationic surfactants are strongly sorbed by solids, particularly clays. Significant sorption of anionic and non-ionic surfactants has been observed in activated sludge and organic river sediments. Surfactants have been shown to improve water infiltration into soils with moderate to severe hydrophobic or water-repellent properties.

Drinking Water Standards: hydrocarbon total: 10 ug/l (UK max.).

Prevent, by any means available, spillage from entering drains or water courses.

**DO NOT discharge into sewer or waterways.**

## 12.2. Persistence and degradability

| Ingredient                      | Persistence: Water/Soil   | Persistence: Air            |
|---------------------------------|---------------------------|-----------------------------|
| N,N-dimethyldecanamide          | LOW                       | LOW                         |
| ethylene glycol monobutyl ether | LOW (Half-life = 56 days) | LOW (Half-life = 1.37 days) |

Continued...

### 12.3. Bioaccumulative potential

| Ingredient                      | Bioaccumulation       |
|---------------------------------|-----------------------|
| N,N-dimethyldecanamide          | LOW (LogKOW = 3.4438) |
| ethylene glycol monobutyl ether | LOW (BCF = 2.51)      |

### 12.4. Mobility in soil

| Ingredient                      | Mobility         |
|---------------------------------|------------------|
| N,N-dimethyldecanamide          | LOW (KOC = 1307) |
| ethylene glycol monobutyl ether | HIGH (KOC = 1)   |

### 12.5. Results of PBT and vPvB assessment

|                         | P             | B             | T             |
|-------------------------|---------------|---------------|---------------|
| Relevant available data | Not Available | Not Available | Not Available |
| PBT                     | ✗             | ✗             | ✗             |
| vPvB                    | ✗             | ✗             | ✗             |
| PBT Criteria fulfilled? | No            |               |               |
| vPvB                    | No            |               |               |

### 12.6. Endocrine disrupting properties

The evidence linking adverse effects to endocrine disruptors is more compelling in the environment than it is in humans. Endocrine disruptors profoundly alter reproductive physiology of ecosystems and ultimately impact entire populations. Some endocrine-disrupting chemicals are slow to break down in the environment. That characteristic makes them potentially hazardous over long periods of time. Some well established adverse effects of endocrine disruptors in various wildlife species include eggshell-thinning, displayed of characteristics of the opposite sex and impaired reproductive development. Other adverse changes in wildlife species that have been suggested, but not proven include reproductive abnormalities, immune dysfunction and skeletal deformities.

### 12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.


## SECTION 13 Disposal considerations

### 13.1. Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Product / Packaging disposal</b> | <ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Treat and neutralise at an approved treatment plant.</li> <li>▶ Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul> |
| <b>Waste treatment options</b>      | Not Available  |
| <b>Sewage disposal options</b>      | Not Available  |

## SECTION 14 Transport information

### Labels Required

|                         |   |
|-------------------------|---|
|                         |  |
| <b>Marine Pollutant</b> | NO  |

**Land transport (ADR-RID)**

|                                    |   |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
|------------------------------------|---|--------------------------------|----|---------------------|----------------|--------------|---|--------------------|-----|------------------|-----|-------------------------|-------|
| 14.1. UN number or ID number       | 1719  |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| 14.2. UN proper shipping name      | CAUSTIC ALKALI LIQUID, N.O.S. (contains potassium hydroxide)  |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| 14.3. Transport hazard class(es)   | <table border="1"> <tr> <td>Class</td> <td>8</td> </tr> <tr> <td>Subsidiary risk</td> <td>Not Applicable</td> </tr> </table>  | Class                          | 8  | Subsidiary risk     | Not Applicable |              |   |                    |     |                  |     |                         |       |
| Class                              | 8   |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| Subsidiary risk                    | Not Applicable  |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| 14.4. Packing group                | III   |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| 14.5. Environmental hazard         | Not Applicable  |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| 14.6. Special precautions for user | <table border="1"> <tr> <td>Hazard identification (Kemler)</td> <td>80</td> </tr> <tr> <td>Classification code</td> <td>C5</td> </tr> <tr> <td>Hazard Label</td> <td>8</td> </tr> <tr> <td>Special provisions</td> <td>274</td> </tr> <tr> <td>Limited quantity</td> <td>5 L</td> </tr> <tr> <td>Tunnel Restriction Code</td> <td>3 (E)</td> </tr> </table> | Hazard identification (Kemler) | 80 | Classification code | C5             | Hazard Label | 8 | Special provisions | 274 | Limited quantity | 5 L | Tunnel Restriction Code | 3 (E) |
| Hazard identification (Kemler)     | 80  |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| Classification code                | C5  |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| Hazard Label                       | 8   |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| Special provisions                 | 274   |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| Limited quantity                   | 5 L   |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |
| Tunnel Restriction Code            | 3 (E)   |                                |    |                     |                |              |   |                    |     |                  |     |                         |       |

**Air transport (ICAO-IATA / DGR)**

|   |  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
|---|--|--------------------|---------|---------------------------------|----------------|-------------------------------|------|--|-----|--|-----|---|------|--|-----|
| 14.1. UN number   | 1719   |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| 14.2. UN proper shipping name                             | Caustic alkali liquid, n.o.s. * (contains potassium hydroxide)   |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| 14.3. Transport hazard class(es)                          | <table border="1"> <tr> <td>ICAO/IATA Class</td> <td>8</td> </tr> <tr> <td>ICAO / IATA Subsidiary Hazard</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>8L</td> </tr> </table>  | ICAO/IATA Class    | 8       | ICAO / IATA Subsidiary Hazard   | Not Applicable | ERG Code                      | 8L   |  |     |  |     |   |      |  |     |
| ICAO/IATA Class   | 8  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| ICAO / IATA Subsidiary Hazard                             | Not Applicable   |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| ERG Code  | 8L   |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| 14.4. Packing group                                       | III  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| 14.5. Environmental hazard                                | Not Applicable   |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| 14.6. Special precautions for user                        | <table border="1"> <tr> <td>Special provisions</td> <td>A3 A803</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>856</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>60 L</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>852</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>5 L</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Y841</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>1 L</td> </tr> </table> | Special provisions | A3 A803 | Cargo Only Packing Instructions | 856            | Cargo Only Maximum Qty / Pack | 60 L | Passenger and Cargo Packing Instructions | 852 | Passenger and Cargo Maximum Qty / Pack | 5 L | Passenger and Cargo Limited Quantity Packing Instructions | Y841 | Passenger and Cargo Limited Maximum Qty / Pack | 1 L |
| Special provisions  | A3 A803  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| Cargo Only Packing Instructions                           | 856  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| Cargo Only Maximum Qty / Pack                             | 60 L   |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| Passenger and Cargo Packing Instructions                  | 852  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| Passenger and Cargo Maximum Qty / Pack                    | 5 L  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| Passenger and Cargo Limited Quantity Packing Instructions | Y841   |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |
| Passenger and Cargo Limited Maximum Qty / Pack            | 1 L  |                    |         |                                 |                |                               |      |  |     |  |     |   |      |  |     |

**Sea transport (IMDG-Code / GGVSee)**

|                                  |  |            |   |              |                |
|----------------------------------|--|------------|---|--------------|----------------|
| 14.1. UN number                  | 1719   |            |   |              |                |
| 14.2. UN proper shipping name    | CAUSTIC ALKALI LIQUID, N.O.S. (contains potassium hydroxide)   |            |   |              |                |
| 14.3. Transport hazard class(es) | <table border="1"> <tr> <td>IMDG Class</td> <td>8</td> </tr> <tr> <td>IMDG Subrisk</td> <td>Not Applicable</td> </tr> </table> | IMDG Class | 8 | IMDG Subrisk | Not Applicable |
| IMDG Class                       | 8  |            |   |              |                |
| IMDG Subrisk                     | Not Applicable   |            |   |              |                |
| 14.4. Packing group              | III  |            |   |              |                |
| 14.5. Environmental hazard       | Not Applicable   |            |   |              |                |

|                                    |                    |          |
|------------------------------------|--------------------|----------|
| 14.6. Special precautions for user | EMS Number         | F-A, S-B |
|                                    | Special provisions | 223 274  |
|                                    | Limited Quantities | 5 L      |

#### Inland waterways transport (ADN)

|                                    |  |        |
|------------------------------------|--|--------|
| 14.1. UN number                    | 1719   |        |
| 14.2. UN proper shipping name      | CAUSTIC ALKALI LIQUID, N.O.S. (contains potassium hydroxide) |        |
| 14.3. Transport hazard class(es)   | 8   Not Applicable   |        |
| 14.4. Packing group                | III  |        |
| 14.5. Environmental hazard         | Not Applicable   |        |
| 14.6. Special precautions for user | Classification code  | C5     |
|                                    | Special provisions   | 274    |
|                                    | Limited quantity   | 5 L    |
|                                    | Equipment required   | PP, EP |
|                                    | Fire cones number  | 0      |

#### 14.7. Maritime transport in bulk according to IMO instruments

##### 14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

##### 14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| Product name  | Group         |
|---|---------------|
| potassium hydroxide   | Not Available |
| sodium metasilicate, pentahydrate                                   | Not Available |
| C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated            | Not Available |
| Fatty alcohol ethoxylates*  | Not Available |
| sodium linear-(C12-14)alkyl ether sulfate                           | Not Available |
| cocamide diethanolamide.  | Not Available |
| N,N-dimethyldecanamide  | Not Available |
| hydrocarbons, C10-13-n-alkanes, isoalkanes, cyclics, < 2% aromatics | Not Available |
| ethylene glycol monobutyl ether                                     | Not Available |

##### 14.7.3. Transport in bulk in accordance with the IGC Code

| Product name   | Ship Type     |
|--|---------------|
| potassium hydroxide                                      | Not Available |
| sodium metasilicate, pentahydrate                        | Not Available |
| C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated | Not Available |
| Fatty alcohol ethoxylates*                               | Not Available |
| sodium linear-(C12-14)alkyl ether sulfate                | Not Available |
| cocamide diethanolamide.                                 | Not Available |

## CargoClean HD

| Product name  | Ship Type     |
|---|---------------|
| N,N-dimethyldecanamide  | Not Available |
| hydrocarbons, C10-13-n-alkanes, isoalkanes, cyclics, < 2% aromatics | Not Available |
| ethylene glycol monobutyl ether                                     | Not Available |

## SECTION 15 Regulatory information

## 15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

## potassium hydroxide is found on the following regulatory lists

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

dNorway regulations on action values and limit values for physical chemical factors in the work environment and infection risk groups for biological factors (Norwegian)

## sodium metasilicate, pentahydrate is found on the following regulatory lists

EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

## C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated is found on the following regulatory lists

Not Applicable

## Fatty alcohol ethoxylates\* is found on the following regulatory lists

Not Applicable

## sodium linear-(C12-14)alkyl ether sulfate is found on the following regulatory lists

Europe EC Inventory

## cocamide diethanolamide. is found on the following regulatory lists

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

## N,N-dimethyldecanamide is found on the following regulatory lists

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

## hydrocarbons, C10-13- n-alkanes, isoalkanes, cyclics, &lt; 2% aromatics is found on the following regulatory lists

Not Applicable

## ethylene glycol monobutyl ether is found on the following regulatory lists

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)

Europe EC Inventory

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

dNorway regulations on action values and limit values for physical chemical factors in the work environment and infection risk groups for biological factors (Norwegian)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

## Information according to 2012/18/EU (Seveso III):

|                 |               |
|-----------------|---------------|
| Seveso Category | Not Available |
|-----------------|---------------|

## 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

Continued...

## ECHA SUMMARY

| Ingredient          | CAS number | Index No     | ECHA Dossier  |
|---------------------|------------|--------------|---------------|
| potassium hydroxide | 1310-58-3  | 019-002-00-8 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)   | Pictograms Signal Word Code(s)         | Hazard Statement Code(s)   |
|-------------------------------|---|--|--|
| 1                             | Acute Tox. 4; Skin Corr. 1A   | GHS05; Dgr                             | H302; H314   |
| 2                             | Skin Corr. 1A; Met. Corr. 1; Acute Tox. 4; Eye Dam. 1; Acute Tox. 3; STOT SE 1; Asp. Tox. 1; Flam. Liq. 2; STOT SE 3; Acute Tox. 3; Aquatic Chronic 3; Expl. 1.1; STOT RE 1 | GHS05; Dgr; GHS08; GHS06; GHS09; GHS01 | H314; H290; H312; H318; H301; H370; H304; H317; H335; H332; H412; H201; H372 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient                        | CAS number | Index No     | ECHA Dossier  |
|-----------------------------------|------------|--------------|---------------|
| sodium metasilicate, pentahydrate | 10213-79-3 | 014-010-00-8 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)                                | Pictograms Signal Word Code(s) | Hazard Statement Code(s)     |
|-------------------------------|--|--------------------------------|------------------------------|
| 1                             | Skin Corr. 1B; STOT SE 3   | GHS05; Dgr                     | H314; H335                   |
| 2                             | Skin Corr. 1B; STOT SE 3; Met. Corr. 1; Acute Tox. 4; Eye Dam. 1 | GHS05; Dgr                     | H314; H335; H290; H302; H318 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient   | CAS number   | Index No      | ECHA Dossier  |
|--|--------------|---------------|---------------|
| C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated | 1554325-20-0 | Not Available | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)                        | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|--|--------------------------------|--------------------------|
| 1                             | Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Aquatic Acute 1 | GHS05; GHS09; Dgr              | H302; H315; H318; H400   |
| 2                             | Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Aquatic Acute 1 | GHS05; GHS09; Dgr              | H302; H315; H318; H400   |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient                 | CAS number   | Index No      | ECHA Dossier  |
|----------------------------|--------------|---------------|---------------|
| Fatty alcohol ethoxylates* | 160875-66-1* | Not Available | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)                                     | Pictograms Signal Word Code(s) | Hazard Statement Code(s)           |
|-------------------------------|---|--------------------------------|------------------------------------|
| 1                             | Acute Tox. 4; Eye Dam. 1  | GHS05; Dgr                     | H302; H318                         |
| 2                             | Acute Tox. 4; Eye Dam. 1; Skin Irrit. 2; STOT SE 3; Aquatic Chronic 2 | GHS05; Dgr; GHS09              | H302; H318; H315; H202; H335; H411 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient                                | CAS number | Index No      | ECHA Dossier  |
|---|------------|---------------|---------------|
| sodium linear-(C12-14)alkyl ether sulfate | 68891-38-3 | Not Available | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)  | Pictograms Signal Word Code(s)  | Hazard Statement Code(s)                       |
|-------------------------------|--|---------------------------------|--|
| 1                             | Skin Irrit. 2; Eye Dam. 1; Aquatic Chronic 3   | GHS05; Dgr                      | H315; H318; H412                               |
| 2                             | Skin Irrit. 2; Eye Dam. 1; Aquatic Chronic 2; Skin Sens. 1   | GHS05; Dgr; GHS09               | H315; H318; H411; H317                         |
| 1                             | Acute Tox. 4; Eye Irrit. 2   | GHS07; Wng                      | H302; H319                                     |
| 2                             | Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Acute Tox. 3; Skin Sens. 1B; Flam. Sol. 1; STOT SE 3; Aquatic Chronic 2 | GHS05; Dgr; GHS06; GHS02; GHS09 | H302; H315; H318; H311; H317; H335; H228; H411 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient               | CAS number  | Index No      | ECHA Dossier  |
|--------------------------|-------------|---------------|---------------|
| cocamide diethanolamide. | 68155-07-7* | Not Available | Not Available |



| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)                     | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|---|--------------------------------|--------------------------|
| 1                             | Skin Irrit. 2; Eye Dam. 1; Aquatic Chronic 2          | GHS05; GHS09; Dgr              | H315; H318; H411         |
| 2                             | Skin Irrit. 2; Eye Dam. 1; Aquatic Chronic 2; Repr. 2 | GHS05; GHS09; Dgr; GHS08       | H315; H318; H411; H361   |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient             | CAS number | Index No      | ECHA Dossier  |
|------------------------|------------|---------------|---------------|
| N,N-dimethyldecanamide | 14433-76-2 | Not Available | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)  | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|--|--------------------------------|--------------------------|
| 1                             | Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; Aquatic Chronic 3                      | GHS07; Wng                     | H315; H319; H335; H412   |
| 2                             | Skin Irrit. 2; STOT SE 3; Aquatic Chronic 2; Eye Dam. 1; Acute Tox. 4; Repr. 2 | GHS09; GHS05; Dgr              | H315; H335; H411; H318   |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient                      | CAS number | Index No     | ECHA Dossier  |
|---------------------------------|------------|--------------|---------------|
| ethylene glycol monobutyl ether | 111-76-2   | 603-014-00-0 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)   | Pictograms Signal Word Code(s) | Hazard Statement Code(s)   |
|-------------------------------|---|--------------------------------|--|
| 1                             | Acute Tox. 4; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; Acute Tox. 4   | GHS07; Wng                     | H302; H312; H315; H319; H332   |
| 2                             | Skin Irrit. 2; Flam. Liq. 2; Skin Sens. 1; Aquatic Chronic 2; Acute Tox. 2; Acute Tox. 2; Repr. 2; STOT SE 1; STOT RE 2; Acute Tox. 3; Eye Dam. 1; Muta. 2; Carc. 2 | GHS06; Dgr; GHS08; GHS05       | H315; H310; H330; H361; H370; H373; H412; H301; H317; H318; H341; H351 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

## National Inventory Status

| National Inventory                             | Status  |
|--|---|
| Australia - AIC / Australia Non-Industrial Use | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)   |
| Canada - DSL                                   | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated; Fatty alcohol ethoxylates*; N,N-dimethyldecanamide)   |
| Canada - NDSL                                  | No (potassium hydroxide; sodium metasilicate, pentahydrate; C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated; Fatty alcohol ethoxylates*; sodium linear-(C12-14)alkyl ether sulfate; cocamide diethanolamide.; ethylene glycol monobutyl ether) |
| China - IECSC                                  | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)   |
| Europe - EINEC / ELINCS / NLP                  | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated; Fatty alcohol ethoxylates*)   |
| Japan - ENCS                                   | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)   |
| Korea - KECI                                   | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)   |
| New Zealand - NZIoC                            | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated; cocamide diethanolamide.)   |
| Philippines - PICCS                            | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated; cocamide diethanolamide.; N,N-dimethyldecanamide)   |
| USA - TSCA                                     | Yes   |
| Taiwan - TCSI                                  | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)   |
| Mexico - INSQ                                  | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated; Fatty alcohol ethoxylates*; sodium linear-(C12-14)alkyl ether sulfate; cocamide diethanolamide.; N,N-dimethyldecanamide)  |
| Vietnam - NCI                                  | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated)   |
| Russia - FBEPH                                 | No (C12-14-alkyl(hydroxyethyl)dimethyl chloride, ethoxylated; Fatty alcohol ethoxylates*)   |
| <b>Legend:</b>                                 | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.   |

## SECTION 16 Other information

|               |            |
|---------------|------------|
| Revision Date | 28/02/2023 |
| Initial Date  | 03/05/2019 |

**CONTACT POINT**

- For quotations contact your local Customer Services - <http://wssdirectory.wilhelmsen.com/#/customerservices> - - Responsible for safety data sheet Wilhelmsen Ships Service AS - Prepared by: Product HSE Manager, - Email: Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com - Telephone: Tel.: +31 10 4877775

**Full text Risk and Hazard codes**

|             |  |
|-------------|--|
| <b>H201</b> | Explosive; mass explosion hazard.                                  |
| <b>H202</b> | Explosive, severe projection hazard.                               |
| <b>H226</b> | Flammable liquid and vapour.                                       |
| <b>H228</b> | Flammable solid.   |
| <b>H301</b> | Toxic if swallowed.  |
| <b>H302</b> | Harmful if swallowed.  |
| <b>H304</b> | May be fatal if swallowed and enters airways.                      |
| <b>H310</b> | Fatal in contact with skin.  |
| <b>H311</b> | Toxic in contact with skin.  |
| <b>H312</b> | Harmful in contact with skin.                                      |
| <b>H315</b> | Causes skin irritation.  |
| <b>H317</b> | May cause an allergic skin reaction.                               |
| <b>H318</b> | Causes serious eye damage.   |
| <b>H319</b> | Causes serious eye irritation.                                     |
| <b>H330</b> | Fatal if inhaled.  |
| <b>H332</b> | Harmful if inhaled.  |
| <b>H335</b> | May cause respiratory irritation.                                  |
| <b>H336</b> | May cause drowsiness or dizziness.                                 |
| <b>H341</b> | Suspected of causing genetic defects.                              |
| <b>H351</b> | Suspected of causing cancer.                                       |
| <b>H361</b> | Suspected of damaging fertility or the unborn child.               |
| <b>H370</b> | Causes damage to organs.   |
| <b>H372</b> | Causes damage to organs through prolonged or repeated exposure.    |
| <b>H373</b> | May cause damage to organs through prolonged or repeated exposure. |
| <b>H400</b> | Very toxic to aquatic life.  |
| <b>H411</b> | Toxic to aquatic life with long lasting effects.                   |
| <b>H412</b> | Harmful to aquatic life with long lasting effects.                 |

**SDS Version Summary**

| Version | Date of Update | Sections Updated  |
|---------|----------------|---|
| 4.23    | 28/02/2023     | Hazards identification - Classification, Composition / information on ingredients - Ingredients |

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

**Definitions and abbreviations**

PC - TWA: Permissible Concentration-Time Weighted Average

PC - STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit  
TEEL: Temporary Emergency Exposure Limit,  
IDLH: Immediately Dangerous to Life or Health Concentrations  
ES: Exposure Standard  
OSF: Odour Safety Factor  
NOAEL :No Observed Adverse Effect Level  
LOAEL: Lowest Observed Adverse Effect Level  
TLV: Threshold Limit Value  
LOD: Limit Of Detection  
OTV: Odour Threshold Value  
BCF: BioConcentration Factors  
BEI: Biological Exposure Index  
AIIIC: Australian Inventory of Industrial Chemicals  
DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European INventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

#### **Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]**

| <b>Classification according to regulation (EC) No 1272/2008 [CLP] and amendments</b> | <b>Classification Procedure</b> |
|--|---------------------------------|
| Corrosive to Metals Category 1, H290   | On basis of test data           |
| Skin Corrosion/Irritation Category 1A, H314  | Minimum classification          |
| , EUH208   | Calculation method              |

**Note:**  
"This composition meets the criteria for not being harmful to the marine environment according to MARPOL Annex V and may be discharged into the sea when used to clean cargo holds and external surfaces on ships."

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