

AQUATUFF

Wilhelmsen Ships Service AS

Catalogue number: 607826 - 607827

Version No: 6.11

Safety Data Sheet (Conforms to Regulation (EU) No 2015/830)

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L.REACH.NOR.EN

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

1.1. Product Identifier

Product name	AQUATUFF
Synonyms	Product Part Number: 607826 (25 liter), 607827 (210 liter), PR No: 51137
Proper shipping name	CAUSTIC ALKALI LIQUID, N.O.S. (potassium hydroxide, solution)
Other means of identification	607826 - 607827, 607826, 607827

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

Product Category Chemical	PC35 Washing and cleaning products (including solventbased products)
Sectors of Use	SU3 Industrial uses: Uses of substances as such or in preparations* at industrial sites
Relevant identified uses	- Degreaser - Cleaning agent
Uses advised against	Not Applicable

1.3. Details of the supplier of the safety data sheet

Registered company name	Wilhelmsen Ships Service AS	Outback (M)SDS portal: http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen	Wilhelmsen Ships Service AS* Central Warehouse
Address	Strandveien 20 Lysaker 1366 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 ----- Norway	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+47 67 58 40 00	Not Available	+31 10 4877 777
Fax	Not Available	Not Available	+31 10 4877888
Website	http://www.wilhelmsen.com/	http://www.wilhelmsen.com	http://www.wilhelmsen.com
Email	wss.norway.cs@wilhelmsen.com	wss.global.sdsinfo@wilhelmsen.com	wss.rotterdam@wilhelmsen.com

1.4. Emergency telephone number

Association / Organisation	Giftinformasjonssentralen - 24 timer	American Chemistry Council 24hrs - Chemtrec	Dutch nat. poison centre
Emergency telephone numbers	+47 22591300	+1 703 527 3887	+ 31 30 274 88 88
Other emergency telephone numbers	Not Available	+1 800 424 9300	Not Available


SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Classified as Dangerous Goods for transport purposes.

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

2.2. Label elements

Hazard pictogram(s)	
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SIGNAL WORD	DANGER
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Hazard statement(s)

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

Supplementary statement(s)

Not Applicable

CLP classification (additional)

Not Applicable

Precautionary statement(s) Prevention

P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P234	Keep only in original packaging.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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2.3. Other hazards

Ingestion may produce health damage*.

May produce discomfort of the respiratory system*.

2-(2-butoxyethoxy)ethanol	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

See 'Composition on ingredients' in Section 3.2

3.2. Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP]

1.1310-58-3 2.215-181-3 3.019-002-00-8 4.01-2119487136-33-XXXX 01-2120767289-38-XXXX	1-5	<u>potassium hydroxide</u>	Skin Corrosion/Irritation Category 1A, Acute Toxicity (Oral) Category 4; H314, H302 [2]
1.68439-46-3* 2.Not Available 3.Not Available 4.01-2119980051-45-XXXX 01-2119979533-26-XXXX	1-5	<u>primary c9-c11 alcoholethoxylate</u>	Eye Irritation Category 2; H319 [1]
1.112-34-5* 2.203-961-6 3.603-096-00-8 4.01-2119475104-44-XXXX	1-5	<u>2-(2-butoxyethoxy)ethanol *</u>	Eye Irritation Category 2; H319 [1]
1.6834-92-0* 2.229-912-9 3.014-010-00-8 4.01-2119449811-37-XXXX	1-5	<u>disodium metasilicate</u>	Skin Corrosion/Irritation Category 1B, Metal Corrosion Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Serious Eye Damage Category 1; H314, H290, H335, H318 [1]
1.160875-66-1* 2.Not Available 3.Not Available 4.Not Available	1-5	<u>fatty alcohol ethoxylates</u>	Serious Eye Damage Category 1, Acute Toxicity (Oral) Category 4; H318, H302 [1]

Legend:

1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ 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. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ 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. ▶ Transport to hospital, or doctor, without delay. ▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▶ 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. ▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p>
Ingestion	<ul style="list-style-type: none"> ▶ For advice, contact a Poisons Information Centre or a doctor at once. ▶ Urgent hospital treatment is likely to be needed. ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ 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.

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

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.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
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5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ 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.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. <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

Minor Spills	<ul style="list-style-type: none"> ▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▶ Check regularly for spills and leaks. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. 										
Major Spills	<p>Chemical Class: bases For release onto land: recommended sorbents listed in order of priority.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">SORBENT TYPE</th> <th style="width: 10%;">RANK</th> <th style="width: 25%;">APPLICATION</th> <th style="width: 15%;">COLLECTION</th> <th style="width: 25%;">LIMITATIONS</th> </tr> </thead> <tbody> <tr> <td colspan="5">LAND SPILL - SMALL</td> </tr> </tbody> </table>	SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS	LAND SPILL - SMALL				
SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS							
LAND SPILL - SMALL											

AQUATUFF

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
Legend				
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				
<ul style="list-style-type: none"> ▶ 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. 				

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

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area.
Fire and explosion protection	See section 5
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ DO NOT store near acids, or oxidising agents ▶ No smoking, naked lights, heat or ignition sources.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. <p>For low viscosity materials</p> <ul style="list-style-type: none"> ▶ Drums and jerricans must be of the non-removable head type. ▶ Where a can is to be used as an inner package, the can must have a screwed enclosure. <p>For materials with a viscosity of at least 2680 cSt.</p>
Storage incompatibility	<ul style="list-style-type: none"> ▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates. ▶ Avoid contact with copper, aluminium and their alloys.



+ X + X + + +

X — Must not be stored together
 0 — May be stored together with specific preventions
 + — May be stored together

7.3. Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
potassium hydroxide	Inhalation 1 mg/m ³ (Local, Chronic) <i>Inhalation 1 mg/m³ (Local, Chronic) *</i>	Not Available
2-(2-butoxyethoxy)ethanol	Dermal 83 mg/kg bw/day (Systemic, Chronic) Inhalation 67.5 mg/m ³ (Systemic, Chronic) Inhalation 67.5 mg/m ³ (Local, Chronic) Inhalation 101.2 mg/m ³ (Local, Acute) <i>Dermal 50 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 40.5 mg/m³ (Systemic, Chronic) *</i> <i>Oral 5 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 40.5 mg/m³ (Local, Chronic) *</i> <i>Inhalation 60.7 mg/m³ (Local, Acute) *</i>	1 mg/L (Water (Fresh)) 0.1 mg/L (Water - Intermittent release) 3.9 mg/L (Water (Marine)) 4 mg/kg sediment dw (Sediment (Fresh Water)) 0.4 mg/kg sediment dw (Sediment (Marine)) 0.4 mg/kg soil dw (Soil) 200 mg/L (STP) 56 mg/kg food (Oral)
disodium metasilicate	Not Available	7.5 mg/L (Water (Fresh)) 1 mg/L (Water - Intermittent release) 7.5 mg/L (Water (Marine)) 1000 mg/L (STP)

* 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 ³	Not Available
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	2-(2-butoxyethoxy)ethanol	2-(2-Butoxyethoxy) ethanol	10 ppm / 67.5 mg/m ³	101.2 mg/m ³ / 15 ppm	Not Available	Not Available
Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian)	2-(2-butoxyethoxy)ethanol	2-2(butoksyetoksy)etanol	10 ppm / 68 mg/m ³	Not Available	Not Available	E

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
potassium hydroxide	Potassium hydroxide	0.18 mg/m ³	2 mg/m ³	54 mg/m ³
2-(2-butoxyethoxy)ethanol	Butoxyethoxy)ethanol, 2-(2-; (Diethylene glycol monobutyl ether)	30 ppm	33 ppm	200 ppm
disodium metasilicate	Sodium silicate; (Sodium metasilicate)	3.8 mg/m ³	42 mg/m ³	250 mg/m ³

Ingredient	Original IDLH	Revised IDLH
potassium hydroxide	Not Available	Not Available
primary c9-c11 alcoholethoxylate	Not Available	Not Available
2-(2-butoxyethoxy)ethanol	Not Available	Not Available
disodium metasilicate	Not Available	Not Available
fatty alcohol ethoxylates	Not Available	Not Available


OCCUPATIONAL EXPOSURE BANDING

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
primary c9-c11 alcoholethoxylate	E	≤ 0.1 ppm
disodium metasilicate	E	≤ 0.01 mg/m ³
fatty alcohol ethoxylates	E	≤ 0.1 ppm
Notes:	<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

8.2. Exposure controls

8.2.1. Appropriate engineering controls	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. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk.
8.2.2. Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ 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. ▶ Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. ▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ Elbow length PVC gloves ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe.

Recommended material(s)

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:

AQUATUFF

Material	CPI
BUTYL	A
NATURAL+NEOPRENE	A
NEOPRENE	A
NITRILE	A
NITRILE+PVC	A
PVC	A
NATURAL RUBBER	B

* 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.

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	Liquid, orange, soluble in water		
Physical state	Liquid	Relative density (Water = 1)	1.045 - 1.055
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	13 - 14	Decomposition temperature	Not Applicable
Melting point / freezing point (°C)	Not Applicable	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Applicable	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

9.2. Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

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

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhaled	<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.</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.</p>
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Ingestion	<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.</p> <p>Accidental ingestion of the material may be damaging to the health of the individual.</p>
Skin Contact	<p>The material can produce severe chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</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>Open cuts, abraded or irritated skin should not be exposed to this material</p> <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.</p>
Eye	<p>When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.</p> <p>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.</p>
Chronic	<p>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.</p> <p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p> <p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p>

AQUATUFF	TOXICITY	IRRITATION
	Not Available	Not Available
potassium hydroxide	Oral (rat) LD50: =214-324 mg/kg ^[2]	Eye (rabbit): 1mg/24h moderate Skin (human): 50 mg/24h SEVERE Skin (rabbit): 50 mg/24h SEVERE
primary c9-c11 alcoholethoxylate	Dermal (rabbit) LD50: >2000 mg/kg ^[2] Dermal (rabbit) LD50: >5000 mg/kg ^{*[2]} Oral (rat) LD50: 1378 mg/kg ^[2] Oral (rat) LD50: 1400 mg/kg ^{*[2]} Oral (rat) LD50: 2700 mg/kg ^{*[2]}	Eye (human): SEVERE Eye: adverse effect observed (irritating) ^[1] Skin: no adverse effect observed (not irritating) ^[1] Skin: SEVERE
2-(2-butoxyethoxy)ethanol	Dermal (rabbit) LD50: 4120 mg/kg ^[2] Oral (rat) LD50: 5660 mg/kg ^[2]	Eye (rabbit): 20 mg/24h moderate Eye (rabbit): 5 mg - SEVERE
disodium metasilicate	Oral (rat) LD50: 1153 mg/kg ^[2]	Skin (human): 250 mg/24h SEVERE Skin (rabbit): 250 mg/24h SEVERE
fatty alcohol ethoxylates	Not Available	Not Available
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	

POTASSIUM HYDROXIDE	<p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>
primary c9-c11 alcoholethoxylate	<p>Human beings have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents, and other cleaning products . Exposure to these chemicals can occur through ingestion, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that volumes well above a reasonable intake level would have to occur to produce any toxic response.</p> <p>Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units: EO < 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes) EO > 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41</p>

	<p>EO > 15-20 gives Harmful (Xn) with R22-41 >20 EO is not classified (CESIO 2000) Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin) . 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 (CO₂). 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). Dermal (rabbit): 4000 mg/kg * Somnolence, ataxia, diarrhoea recorded.</p>
2-(2-butoxyethoxy)ethanol	<p>For diethylene glycol monoalkyl ethers and their acetates: This category includes diethylene glycol ethyl ether (DGEE), diethylene glycol propyl ether (DGPE) diethylene glycol butyl ether (DGBE) and diethylene glycol hexyl ether (DGHE) and their acetates. Acute toxicity: There are adequate oral, inhalation and/or dermal toxicity studies on the category members. Oral LD50 values in rats for all category members are all > 3000 mg/kg bw, with values generally decreasing with increasing molecular weight. Four to eight hour acute inhalation toxicity studies were conducted for all category members except DGPE in rats at the highest vapour concentrations achievable.</p>
AQUATUFF & POTASSIUM HYDROXIDE & disodium metasilicate	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.</p>
POTASSIUM HYDROXIDE & primary c9-c11 alcoholethoxylate & disodium metasilicate	<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. 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>
primary c9-c11 alcoholethoxylate & 2-(2-butoxyethoxy)ethanol	<p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>

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

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

AQUATUFF	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	96	Fish	80mg/L	4
	EC0	48	Crustacea	<1mg/L	2
	NOEC	24	Fish	28mg/L	2

primary c9-c11 alcoholethoxylate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	8.5mg/L	4
	EC50	48	Crustacea	2.5mg/L	2
	EC50	96	Algae or other aquatic plants	1.4mg/L	2
	EC20	72	Algae or other aquatic plants	0.711mg/L	2
	NOEC	240	Fish	0.16mg/L	2

2-(2-butoxyethoxy)ethanol	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	1-300mg/L	2

AQUATUFF

	EC50	48	Crustacea	4-950mg/L	2
	EC50	72	Algae or other aquatic plants	1-101mg/L	2
	NOEC	96	Algae or other aquatic plants	>=100mg/L	1
disodium metasilicate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	2-320mg/L	2
	EC50	48	Crustacea	1-700mg/L	2
	EC50	72	Algae or other aquatic plants	207mg/L	2
fatty alcohol ethoxylates	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 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				

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
2-(2-butoxyethoxy)ethanol	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
2-(2-butoxyethoxy)ethanol	LOW (BCF = 0.46)

12.4. Mobility in soil

Ingredient	Mobility
2-(2-butoxyethoxy)ethanol	LOW (KOC = 10)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Applicable	Not Applicable	Not Applicable
PBT Criteria fulfilled?	Not Applicable	Not Applicable	Not Applicable

12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Recycle wherever possible. ▶ 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. ▶ Treat and neutralise at an approved treatment plant.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO

Land transport (ADR)

14.1. UN number	1719
14.2. UN proper shipping name	CAUSTIC ALKALI LIQUID, N.O.S. (potassium hydroxide, solution)
14.3. Transport hazard class(es)	Class : 8 Subrisk : Not Applicable
14.4. Packing group	III
14.5. Environmental hazard	Not Applicable
14.6. Special precautions for user	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. * (potassium hydroxide, solution)
14.3. Transport hazard class(es)	ICAO/IATA Class : 8 ICAO / IATA Subrisk : Not Applicable ERG Code : 8L
14.4. Packing group	III
14.5. Environmental hazard	Not Applicable
14.6. Special precautions for user	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. (potassium hydroxide, solution)
14.3. Transport hazard class(es)	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. (potassium hydroxide, solution)	
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. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

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
- Europe European Customs Inventory of Chemical Substances
- 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
- Norway regulations on action values and limit values for physical and chemical factors in the work environment and infection risk groups for biological fact (Norwegian)

PRIMARY C9-C11 ALCOHOLETHOXYLATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Not Applicable

2-(2-BUTOXYETHOXY)ETHANOL IS FOUND ON THE FOLLOWING REGULATORY LISTS

- EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)
- EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
- Europe EC Inventory
- Europe European Customs Inventory of Chemical Substances
- 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
- Norway regulations on action values and limit values for physical and chemical factors in the work environment and infection risk groups for biological fact (Norwegian)

DISODIUM METASILICATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
- Europe EC Inventory
- Europe European Customs Inventory of Chemical Substances
- 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

FATTY ALCOHOL ETHOXYLATES IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Not Applicable

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) 2015/830; Regulation (EC) No 1272/2008 as updated through ATPs.

15.2. Chemical safety assessment

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

National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	No (fatty alcohol ethoxylates)
Canada - NDSL	No (potassium hydroxide; primary c9-c11 alcoholethoxylate; 2-(2-butoxyethoxy)ethanol; disodium metasilicate; fatty alcohol ethoxylates)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (primary c9-c11 alcoholethoxylate; fatty alcohol ethoxylates)
Japan - ENCS	No (primary c9-c11 alcoholethoxylate; fatty alcohol ethoxylates)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (fatty alcohol ethoxylates)
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (fatty alcohol ethoxylates)
Vietnam - NCI	Yes
Russia - ARIPS	No (primary c9-c11 alcoholethoxylate; fatty alcohol ethoxylates)
Legend:	<i>Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)</i>

SECTION 16 OTHER INFORMATION

Revision Date	08/11/2018
Initial Date	27/03/2018

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

H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

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.

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

Notes

"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."

AQUATUFF

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