

Product brands by Wilhelmsen







## DESCALING LIQUID

Outback (M)SDS portal:  
[http://jr.chemwatch.net/outb/account/autologin?  
 login=wilhelmsen](http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen)

Part Number: 571653 (25L)

Version No: 7.8

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

Issue Date: 19/06/2024

Print Date: 08/07/2024

L.REACH.ISL.EN

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

#### 1.1. Product Identifier

Product name	DESCALING LIQUID
Chemical Name	Not Applicable
Synonyms	Pr No: 16178 (Norway)
Proper shipping name	HYDROCHLORIC ACID
Chemical formula	Not Applicable
Other means of identification	571653 (25L), 571653

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

Chemical Product Category	PC35   Washing and cleaning products
Sectors of Use	SU3   Industrial uses
Relevant identified uses	Acid Cleaner
Uses advised against	No specific uses advised against are identified.

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

Registered company name	Outback (M)SDS portal: <a href="http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen">http://jr.chemwatch.net/outb/account/autologin? login=wilhelmsen</a>	Wilhelmsen Ships Service AS* Central Warehouse
Address	-----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	Not Available	+31 10 4877 777
Fax	Not Available	Not Available
Website	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>	<a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a>
Email	wss.global.sdsinfo@wilhelmsen.com	wss.rotterdam@wilhelmsen.com

#### 1.4. Emergency telephone number

Association / Organisation	24hrs - Chemwatch	Dutch nat. poison centre	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+31-10-4877700	+ 31 88 7558561	+61 3 9573 3188
Other emergency telephone numbers	+31-10-4877700	+ 31 10 4877700	Not Available

## 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 1B, H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3
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.
H335	May cause respiratory irritation.

### Supplementary statement(s)

Not Applicable

### 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.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and 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.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

### Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

### 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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Material contains hydrogen chloride.

Continued...

### 2.3. Other hazards

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

## 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] and amendments	SCL / M-Factor	Nanoform Particle Characteristics
1. 7647-01-0. 2.231-595-7 3.017-002-00-2 017-002-01-X 4.Not Available	30-35	<u>hydrogen chloride</u> *	Gases Under Pressure (Refrigerated Liquefied Gas), Skin Corrosion/Irritation Category 1A, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Inhalation) Category 3; H281, H314, H318, H331, EUH044 [1]	Skin Corr. 1B; H314: C ≥ 25 %   Skin Irrit. 2; H315: 10 % ≤ C < 25 %   Eye Irrit. 2; H319: 10 % ≤ C < 25 %   STOT SE 3; H335: C ≥ 10 %  Acute M factor: Not Available  Chronic M factor: Not Available	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> (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> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul>

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**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 strong acids:

- ▶ Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- ▶ Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- ▶ Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- ▶ Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the desiccating action of the acid on proteins in specific tissues.

INGESTION:

- ▶ Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- ▶ **DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.**
- ▶ Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- ▶ Charcoal has no place in acid management.
- ▶ Some authors suggest the use of lavage within 1 hour of ingestion.

SKIN:

- ▶ Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- ▶ Deep second-degree burns may benefit from topical silver sulfadiazine.

EYE:

- ▶ Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. **DO NOT use neutralising agents or any other additives.** Several litres of saline are required.
- ▶ Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- ▶ Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).

[Ellenhorn and 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>	None known.
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**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>▶ Non combustible.</li> <li>▶ Not considered to be a significant fire risk.</li> <li>▶ Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ May emit corrosive, poisonous fumes. May emit acrid smoke.</li> </ul> <p>Decomposition may produce toxic fumes of:</p> <p>hydrogen chloride</p> <p><b>Contains low boiling substance:</b> Closed containers may rupture due to pressure buildup under fire conditions.</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**

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<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:acidic compounds, inorganic 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>foamed glass - pillows</td> <td>1</td> <td>throw</td> <td>pitchfork</td> <td>R, P, DGC, RT</td> </tr> <tr> <td>expanded mineral - particulate</td> <td>2</td> <td>shovel</td> <td>shovel</td> <td>R, I, W, P, DGC</td> </tr> <tr> <td>foamed glass - particulate</td> <td>2</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>expanded mineral -particulate</td> <td>1</td> <td>blower</td> <td>skidloader</td> <td>R, I, W, P, DGC</td> </tr> <tr> <td>foamed glass- particulate</td> <td>2</td> <td>blower</td> <td>skidloader</td> <td>R, W, P, DGC</td> </tr> <tr> <td>foamed glass - particulate</td> <td>3</td> <td>throw</td> <td>skidloader</td> <td>R, W, P, DGC</td> </tr> </tbody> </table> <p>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</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <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>▶ Stop leak if safe to do so.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> </ul>	SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS	LAND SPILL - SMALL					foamed glass - pillows	1	throw	pitchfork	R, P, DGC, RT	expanded mineral - particulate	2	shovel	shovel	R, I, W, P, DGC	foamed glass - particulate	2	shovel	shovel	R, W, P, DGC	LAND SPILL - MEDIUM					expanded mineral -particulate	1	blower	skidloader	R, I, W, P, DGC	foamed glass- particulate	2	blower	skidloader	R, W, P, DGC	foamed glass - particulate	3	throw	skidloader	R, W, P, DGC
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**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>	<p><b>Contains low boiling substance:</b> Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.</p> <ul style="list-style-type: none"> <li>▶ Check for bulging containers.</li> <li>▶ Vent periodically</li> <li>▶ Always release caps or seals slowly to ensure slow dissipation of vapours</li> <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> </ul>

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

Continued...

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<p><b>Suitable container</b></p>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT use aluminium or galvanised containers</b></li> <li>▶ Check regularly for spills and leaks</li> <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>
<p><b>Storage incompatibility</b></p>	<ul style="list-style-type: none"> <li>▶ Inorganic acids are generally soluble in water with the release of hydrogen ions. The resulting solutions have pH's of less than 7.0.</li> <li>▶ Inorganic acids neutralise chemical bases (for example: amines and inorganic hydroxides) to form salts - neutralisation can generate dangerously large amounts of heat in small spaces.</li> <li>▶ The dissolution of inorganic acids in water or the dilution of their concentrated solutions with additional water may generate significant heat.</li> <li>▶ The addition of water to inorganic acids often generates sufficient heat in the small region of mixing to cause some of the water to boil explosively. The resulting "bumping" can spatter the acid.</li> <li>▶ Inorganic acids react with active metals, including such structural metals as aluminum and iron, to release hydrogen, a flammable gas.</li> <li>▶ Contact with moisture or water may generate heat causing ignition</li> <li>▶ Reacts vigorously with alkalis</li> <li>▶ Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.</li> </ul>
<p><b>Hazard categories in accordance with Regulation (EC) No 2012/18/EU (Seveso III)</b></p>	<p>Not Available</p>
<p><b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b></p>	<p>Not Available</p>



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 Exposure Pattern Worker	PNECs Compartment
hydrogen chloride	Inhalation 8 mg/m <sup>3</sup> (Local, Chronic) Inhalation 15 mg/m <sup>3</sup> (Local, Acute) <i>Inhalation 8 mg/m<sup>3</sup> (Local, Chronic) *</i> <i>Inhalation 15 mg/m<sup>3</sup> (Local, Acute) *</i>	Not Available

\* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

Continued...

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Source	Ingredient	Material name	TWA	STEL	Peak	Notes
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	hydrogen chloride	Hydrogen Chloride	5 ppm / 8 mg/m3	15 mg/m3 / 10 ppm	Not Available	Not Available
Iceland Occupational Exposure Limits	hydrogen chloride	Hydrogen chloride (hydrogen chloride)	Not Available	Not Available	5 ppm / 8 mg/m3	Not Available

Emergency Limits			
Ingredient	TEEL-1	TEEL-2	TEEL-3
hydrogen chloride	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
hydrogen chloride	50 ppm	Not Available

**MATERIAL DATA**

for hydrogen chloride:  
 Odour Threshold Value: 0.262 ppm (detection), 10.06 ppm (recognition)  
 NOTE: Detector tubes for hydrochloric acid, measuring in excess of 1 ppm, are available commercially.  
 Hydrogen chloride is a strong irritant to the eyes, mucous membranes and skin. Chronic exposure produces a corrosive action on the teeth. Reports of respiratory irritation following short-term exposure at 5 ppm have lead to the recommended TLV-C. There is no indication that skin contact with hydrogen chloride elicits systemic poisoning and a skin designation has not been applied.  
 Exposure of humans to hydrogen chloride at 50 to 100 ppm for 1 hour is reported to be barely tolerable; 35 ppm caused irritation of the throat on short exposure and 10 ppm was the maximal concentration for prolonged exposure. It has been stated that hydrogen chloride at concentrations of 5 ppm is immediately irritating.  
 Exposed individuals are **NOT** reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

$$OSF = \frac{\text{Exposure Standard (TWA) ppm}}{\text{Odour Threshold Value (OTV) ppm}}$$

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

**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:                      Process controls which involve changing the way a job activity or process is done to reduce the risk.                      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> </ul>

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	▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
<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>

**Respiratory protection**

Type B-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	B-AUS P2	-	B-PAPR-AUS / Class 1 P2
up to 50 x ES	-	B-AUS / Class 1 P2	-
up to 100 x ES	-	B-2 P2	B-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)

76b-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**

<b>Appearance</b>	Liquid, pale yellow, soluble in water		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.16
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	1	<b>Decomposition temperature (°C)</b>	Not Applicable
<b>Melting point / freezing point (°C)</b>	-30	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	100	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available BuAC = 1	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Applicable
<b>Vapour pressure (kPa)</b>	105.5	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	1.26	<b>VOC g/L</b>	Not Applicable
<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**

Continued...

## DESCALING LIQUID

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	▶ Contact with alkaline material liberates heat
<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>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>Acidic corrosives produce respiratory tract irritation with coughing, choking and mucous membrane damage. Symptoms of exposure may include dizziness, headache, nausea and weakness. In more severe exposures, pulmonary oedema may be evident either immediately or after a latent period of 5-72 hours. Symptoms of pulmonary oedema include a tightness in the chest, dyspnoea, frothy sputum and cyanosis. Examination may reveal hypotension, a weak and rapid pulse and moist rates. Death, due to anoxia, may occur several hours after onset of the pulmonary oedema.</p> <p>Hydrogen chloride (HCl) vapour or fumes present a hazard from a single acute exposure. Exposures of 1300 to 2000 ppm have been lethal to humans in a few minutes.</p> <p>Inhalation of HCl may cause choking, coughing, burning sensation and may cause ulceration of the nose, throat and larynx. Fluid on the lungs followed by generalised lung damage may follow.</p> <p>Breathing of HCl vapour may aggravate asthma and inflammatory or fibrotic pulmonary disease.</p> <p>High concentrations cause necrosis of the tracheal and bronchial epithelium, pulmonary oedema, atelectasis and emphysema and damage to the pulmonary blood vessels and liver.</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects.</p> <p>Inhalation of the vapour is hazardous and may even be fatal</p>
<b>Ingestion</b>	<p>Ingestion of acidic corrosives may produce circumoral burns with a distinct discolouration of the mucous membranes of the mouth, throat and oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident. Oedema of the epiglottis may produce respiratory distress and possibly, asphyxia. Nausea, vomiting, diarrhoea and a pronounced thirst may occur. More severe exposures may produce a vomitus containing fresh or dark blood and large shreds of mucosa. Shock, with marked hypotension, weak and rapid pulse, shallow respiration and clammy skin may be symptomatic of the exposure. Circulatory collapse may, if left untreated, result in renal failure.</p> <p>The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.</p> <p>Not normally a hazard due to physical form of product.</p> <p>Considered an unlikely route of entry in commercial/industrial environments</p>
<b>Skin Contact</b>	<p>Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue.</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>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>
<b>Eye</b>	<p>Direct eye contact with acid corrosives may produce pain, lachrymation, photophobia and burns. Mild burns of the epithelia generally recover rapidly and completely. Severe burns produce long-lasting and possible irreversible damage. The appearance of the burn may not be apparent for several weeks after the initial contact. The cornea may ultimately become deeply vascularised and opaque resulting in blindness.</p> <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>Irritation of the eyes may produce a heavy secretion of tears (lachrymation).</p>
<b>Chronic</b>	<p>Repeated or prolonged exposure to acids 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.</p> <p>The impact of inhaled acidic agents on the respiratory tract depends upon a number of interrelated factors. These include physicochemical characteristics, e.g., gas versus aerosol; particle size (small particles can penetrate deeper into the lung); water solubility (more soluble agents are more likely to be removed in the nose and mouth). Given the general lack of information on</p>

Continued...

## DESCALING LIQUID

	<p>the particle size of aerosols involved in occupational exposures to acids, it is difficult to identify their principal deposition site within the respiratory tract.</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> <p>Chronic minor exposure to hydrogen chloride (HCl) vapour or fume may cause discolouration or erosion of the teeth, bleeding of the nose and gums; and ulceration of the nasal mucous membranes.</p> <p>Repeated exposures of animals to concentrations of about 34 ppm HCl produced no immediate toxic effects.</p> <p>Workers exposed to hydrochloric acid suffered from gastritis and a number of cases of chronic bronchitis have also been reported.</p> <p>Repeated or prolonged exposure to dilute solutions of HCl may cause dermatitis.</p>	
DESCALING LIQUID	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
hydrogen chloride	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (mouse) LD50: 1449 mg/kg <sup>[2]</sup>	Eye (rabbit): 5 mg/30s - mild
	Oral (Rat) LD50: 900 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
		Skin: adverse effect observed (corrosive) <sup>[1]</sup>
		Skin: adverse effect observed (irritating) <sup>[1]</sup>
<b>Legend:</b>	<p>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</p>	

DESCALING LIQUID	<p>for acid mists, aerosols, vapours</p> <p>Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airways from direct exposure to inhaled acidic mists, just as mucous plays an important role in protecting the gastric epithelium from its auto-secreted hydrochloric acid. In considering whether pH itself induces genotoxic events in vivo in the respiratory system, comparison should be made with the human stomach, in which gastric juice may be at pH 1-2 under fasting or nocturnal conditions, and with the human urinary bladder, in which the pH of urine can range from &lt;5 to &gt; 7 and normally averages 6.2. Furthermore, exposures to low pH in vivo differ from exposures <i>in vitro</i> in that, <i>in vivo</i>, only a portion of the cell surface is subjected to the adverse conditions, so that perturbation of intracellular homeostasis may be maintained more readily than in vitro.</p>
HYDROGEN CHLORIDE	<p>4701 ppm/30m</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>
DESCALING LIQUID & HYDROGEN CHLORIDE	<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>

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

No evidence of endocrine disrupting properties were found in the current literature.

### 11.2.2. Other information

See Section 11.1

Continued...

## DESCALING LIQUID

## SECTION 12 Ecological information

## 12.1. Toxicity

DESCALING LIQUID	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

  

hydrogen chloride	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	334.734mg/L	4
	EC50(ECx)	9.33h	Fish	0.51mg/L	4

**Legend:** *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*

**Ecotoxicity:**

The tolerance of water organisms towards pH margin and variation is diverse. Recommended pH values for test species listed in OECD guidelines are between 6.0 and almost 9. Acute testing with fish showed 96h-LC50 at about pH 3.5

For Chloride: Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels. Incidental exposure to inorganic chloride may occur in occupational settings where chemicals management policies are improperly applied. The toxicity of chloride salts depends on the counterion (cation) present; that of chloride itself is unknown. Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure. Healthy individuals can tolerate the intake of large quantities of chloride provided that there is an intake of fresh water following ingestion. Although excessive intake of drinking-water containing sodium chloride at concentrations above 2.5 g/L has been reported to produce hypertension, this effect is believed to be related to the sodium ion concentration. Chloride concentrations in excess of about 250 mg/L can give rise to detectable taste in water.

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
hydrogen chloride	LOW	LOW

## 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
hydrogen chloride	LOW (LogKOW = 0.5392)

## 12.4. Mobility in soil

Ingredient	Mobility
hydrogen chloride	LOW (Log KOC = 14.3)

## 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

No evidence of endocrine disrupting properties were found in the current literature.

## 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

Product / Packaging disposal	
	<ul style="list-style-type: none"> <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> </ul>

Continued...

	<ul style="list-style-type: none"> <li>▶ Treat and neutralise at an approved treatment plant. Treatment should involve: Neutralisation with soda-ash or soda-lime 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 with 5% aqueous sodium hydroxide or soda ash, followed by water. 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	1789												
14.2. UN proper shipping name	HYDROCHLORIC ACID												
14.3. Transport hazard class(es)	<table border="1"> <tr> <td>Class</td> <td>8</td> </tr> <tr> <td>Subsidiary Hazard</td> <td>Not Applicable</td> </tr> </table>	Class	8	Subsidiary Hazard	Not Applicable								
Class	8												
Subsidiary Hazard	Not Applicable												
14.4. Packing group	II												
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>C1</td> </tr> <tr> <td>Hazard Label</td> <td>8</td> </tr> <tr> <td>Special provisions</td> <td>520</td> </tr> <tr> <td>Limited quantity</td> <td>1 L</td> </tr> <tr> <td>Tunnel Restriction Code</td> <td>E</td> </tr> </table>	Hazard identification (Kemler)	80	Classification code	C1	Hazard Label	8	Special provisions	520	Limited quantity	1 L	Tunnel Restriction Code	E
Hazard identification (Kemler)	80												
Classification code	C1												
Hazard Label	8												
Special provisions	520												
Limited quantity	1 L												
Tunnel Restriction Code	E												

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

14.1. UN number	1789														
14.2. UN proper shipping name	Hydrochloric acid														
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	II														
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>855</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>30 L</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>851</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>1 L</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Y840</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>0.5 L</td> </tr> </table>	Special provisions	A3 A803	Cargo Only Packing Instructions	855	Cargo Only Maximum Qty / Pack	30 L	Passenger and Cargo Packing Instructions	851	Passenger and Cargo Maximum Qty / Pack	1 L	Passenger and Cargo Limited Quantity Packing Instructions	Y840	Passenger and Cargo Limited Maximum Qty / Pack	0.5 L
Special provisions	A3 A803														
Cargo Only Packing Instructions	855														
Cargo Only Maximum Qty / Pack	30 L														
Passenger and Cargo Packing Instructions	851														
Passenger and Cargo Maximum Qty / Pack	1 L														
Passenger and Cargo Limited Quantity Packing Instructions	Y840														
Passenger and Cargo Limited Maximum Qty / Pack	0.5 L														

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

14.1. UN number	1789
-----------------	------

## DESCALING LIQUID

14.2. UN proper shipping name	HYDROCHLORIC ACID	
14.3. Transport hazard class(es)	IMDG Class	8
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	F-A , S-B
	Special provisions	Not Applicable
	Limited Quantities	1 L

## Inland waterways transport (ADN)

14.1. UN number	1789	
14.2. UN proper shipping name	HYDROCHLORIC ACID	
14.3. Transport hazard class(es)	8	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	C1
	Special provisions	520
	Limited quantity	1 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
hydrogen chloride	Not Available

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

Product name	Ship Type
hydrogen chloride	Not Available

## SECTION 15 Regulatory information

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

## hydrogen chloride 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

Iceland Occupational Exposure Limits

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

## Additional Regulatory Information

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) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

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

Continued...

<b>Seveso Category</b>	Not Available
------------------------	---------------

## 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 - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (hydrogen chloride)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory 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

<b>Revision Date</b>	19/06/2024
<b>Initial Date</b>	26/09/2016

### 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: Compliance Manager, - Email: [wss.global.sdsinfo@wilhelmsen.com](mailto:wss.global.sdsinfo@wilhelmsen.com) - Telephone: Tel.: +47 67584000

## Full text Risk and Hazard codes

<b>H281</b>	Contains refrigerated gas; may cause cryogenic burns or injury.
<b>H318</b>	Causes serious eye damage.
<b>H331</b>	Toxic if inhaled.

## SDS Version Summary

Version	Date of Update	Sections Updated
6.8	19/06/2024	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

Continued...

- 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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
  
- 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]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Corrosive to Metals Category 1, H290	Expert judgement
Skin Corrosion/Irritation Category 1B, H314	Expert judgement
Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , H335	Expert judgement

#### 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.”**

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