



Wilhelmsen Ships Service AS

Part Number: 571687 Version No: 12.16 Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Print Date: 09/11/2023 L.REACH.NOR.EN

Issue Date: 04/01/2022

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

1.1. Product Identifier

Product name	DISCLEAN			
Chemical Name	ot Applicable			
Synonyms	oduct Part Number: 571687 (25 liter)			
Proper shipping name	HOSPHORIC ACID, SOLUTION			
Chemical formula	lot Applicable			
Other means of identification	571687			

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: Uses of substances as such or in preparations* at industrial sites			
Relevant identified uses	Use according to manufacturer's directions.			
Uses advised against	No specific uses advised against are identified.			

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

+31 10 4877 777

http://www.wilhelmsen.com

Not Available

Telephone

Website

Fax

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	Fax Not Available Not Available		Not Available	
		http://www.wilhelmsen.com	http://www.wilhelmsen.com	
		wss.global.sdsinfo@wilhelmsen.com	wss.rotterdam@wilhelmsen.com	
	I			
Registered company name	Wilhelmsen Ships Service AS* Central Warehouse			
Address	Willem Barentszstraat 50 Rotterdam Netherlands			

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Email

wss.rotterdam@wilhelmsen.com

1.4. Emergency telephone number

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

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

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

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

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] and	
amendments [1]	

H314 - Skin Corrosion/Irritation Category 1B, H290 - Corrosive to Metals Category 1, H302 - Acute Toxicity (Oral) Category 4

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

Danger

Hazard statement(s)

H314	Causes severe skin burns and eye damage.	
H290	May be corrosive to metals.	
H302	Harmful if swallowed.	

Supplementary statement(s)

Not Applicable

CLP classification (additional)

Not Applicable

Precautionary statement(s) Prevention

P260	Do not breathe mist/vapours/spray.	
P264	Wash all exposed external body areas thoroughly after handling.	
P280 Wear protective gloves, protective clothing, eye protection and face protection.		

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If more than 15 mins from Doctor, INDUCE VOMITING (if conscious).
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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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.

Precautionary statement(s) Disposal

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

2.3. Other hazards

Skin contact may produce health damage*.

Cumulative effects may result following exposure*.

2-(2-butoksyethoxy)ethanol

Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

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. 7664-38-2 2.231-633-2 3.015-011-00-6 4.Not Available	30-60	phosphoric acid *	Skin Corrosion/Irritation Category 1B; H314 [2]	Skin Corr. 1B; H314: C ≥ 25 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 %	Not Available
1. 112-34-5* 2.203-961-6 3.603-096-00-8 4.Not Available	1-5	2-(2-butoksyethoxy)ethanol	Serious Eye Damage/Eye Irritation Category 2; H319 [1]	Not Available	Not Available
Legend:		•	n drawn from Regulation (EU) No identified as having endocrine dis		ssification drawn from

SECTION 4 First aid measures

4.1. Description of first a	id measures
Eye Contact	If this product comes in contact with the eyes: 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	If skin or hair contact occurs: 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	 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.
Ingestion	 IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. For advice, contact a Poisons Information Centre or a doctor. Urgent hospital treatment is likely to be needed. In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive

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measures as indicated by the patient's condition.

- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS

Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

• INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

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 phosphate salts intoxication:

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
- Ingestion of large quantities of phosphate salts (over 1.0 grams for an adult) may cause an osmotic catharsis resulting in diarrhoea and probable abdominal cramps. Larger doses such as 4-8 grams will almost certainly cause these effects in everyone. In healthy individuals most of the ingested salt will be excreted in the faeces with the diarrhoea and, thus, not cause any systemic toxicity. Doses greater than 10 grams hypothetically may cause systemic toxicity.
- ▶ Treatment should take into consideration both anionic and cation portion of the molecule.
- All phosphate salts, except calcium salts, have a hypothetical risk of hypocalcaemia, so calcium levels should be monitored.

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 dessicating 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 conjuctival 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.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility None known.

5.3. Advice for firefighters

Fire Fighting

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- ▶ Prevent, by any means available, spillage from entering drains or water courses.

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Fire/Explosion Hazard

- ► Non combustible.
- ▶ Not considered to be a significant fire risk.
- Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.

Decomposition may produce toxic fumes of:

phosphorus oxides (POx) May emit poisonous fumes.

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	Environmental hazard - contain spillage. 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	Control personal contact v Environmental hazard - contai Clear area of personnel ar Alert Fire Brigade and tell Wear breathing apparatus Chemical Class:acidic compor For release onto land: recomm SORBENT TYPE RANK AP LAND SPILL - SMALL foamed glass - pillows expanded mineral - particulate LAND SPILL - MEDIUM expanded mineral -particulate foamed glass - particulate LAND SPILL - MEDIUM expanded mineral -particulate foamed glass - particulate	vith their n spillal n spi	substange. e upwir pocation rotectiv norgani di sorber TION 1 thi 2 sh blo c blo d three	nd. and na e glovi c nts liste COL ovel wer wer wer	y using prote ature of haza es.	rd.			
		in is rugged commentally sensitive sites							

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	 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

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Other information

- Store in original containers.
- Keep containers securely sealed.
- ▶ Store in a cool, dry, well-ventilated area.

7.2. Conditions for safe storage, including any incompatibilities

DO NOT use aluminium or galvanised containers

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.

Suitable container

For low viscosity materials

- ▶ 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.

For materials with a viscosity of at least 2680 cSt.

All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

Phosphoric acid:

- ▶ is a medium-strong acid which produces violent reaction with bases
- ▶ may produce violent react when water is added to the concentrated form
- reacts violently with solutions containing ammonia or bleach, azo compounds, epoxides and other polymerisable compounds
- reacts, possibly violently with amines, aldehydes, alkanolamines, alcohols, alkylene oxides, amides, ammonia, ammonia hydroxide, calcium oxide, cyanides, epichlorohydrin, esters, halogenated organics, isocyanates, ketones, oleum, organic anhydrides, sodium tetraborate, sulfides, sulfuric acid, strong oxidisers, vinyl acetate
- forms explosive mixtures with nitromethane
- ▶ at elevated temperatures attacks many metals producing hydrogen gas
- at room temperature does not attack stainless steel, copper or its alloys
- attacks glass, ceramics, and some plastics, rubber and coatings
- Inorganic acids are generally soluble in water with the release of hydrogen ions. The resulting solutions have pH's of less than 7.0.
- 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.
- Reacts vigorously with alkalis
- Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.
- Phosphates are incompatible with oxidising and reducing agents.
- Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides.
- ▶ Partial oxidation of phosphates by oxidizing agents may result in the release of toxic phosphorus oxides.

Hazard categories in accordance with Regulation (EC) No 1272/2008

Storage incompatibility

Not Available

Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of

Not Available















- X Must not be stored together
- 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

Ingradiant	DNELs	PNECs
Ingredient	Exposure Pattern Worker	Compartment

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Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
phosphoric acid	Dermal 2.33 mg/kg bw/day (Systemic, Chronic) Inhalation 8.23 mg/m³ (Systemic, Chronic) Inhalation 1 mg/m³ (Local, Chronic) Dermal 134.5 mg/kg bw/day (Systemic, Acute) Inhalation 948.6 mg/m³ (Systemic, Acute) Inhalation 1 mg/m³ (Local, Acute) Dermal 1.9 mg/kg bw/day (Systemic, Chronic) * Inhalation 3.3 mg/m³ (Systemic, Chronic) * Oral 0.1 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.36 mg/m³ (Local, Chronic) * Dermal 67.3 mg/kg bw/day (Systemic, Acute) * Inhalation 233.9 mg/m³ (Systemic, Acute) * Oral 67.3 mg/kg bw/day (Systemic, Acute) * Inhalation 1 mg/m³ (Local, Acute) *	Not Available
2-(2-butoksyethoxy)ethanol	Dermal 24.5 mg/kg bw/day (Systemic, Chronic) Inhalation 8.64 mg/m³ (Systemic, Chronic) Inhalation 67.5 mg/m³ (Local, Chronic) Inhalation 101.2 mg/m³ (Local, Acute) Dermal 8.75 mg/kg bw/day (Systemic, Chronic) * Inhalation 1.52 mg/m³ (Systemic, Chronic) * Oral 0.875 mg/kg bw/day (Systemic, Chronic) *	1.1 mg/L (Water (Fresh)) 11 mg/L (Water - Intermittent release) 0.11 mg/L (Water (Marine)) 4.4 mg/kg sediment dw (Sediment (Fresh Water)) 0.44 mg/kg sediment dw (Sediment (Marine)) 0.32 mg/kg soil dw (Soil) 56 mg/kg food (Oral)

^{*} Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	phosphoric acid	Ortophosphoric acid	1 mg/m3	2 mg/m3	Not Available	Not Available
Norway regulations on action rvalues and limif values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian)	phosphoric acid	Fosforsyre	1 mg/m3	Not Available	Not Available	E
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	2-(2-butoksyethoxy)ethanol	2-(2-Butoxyethoxy) ethanol	10 ppm / 67.5 mg/m3	101.2 mg/m3 / 15 ppm	Not Available	Not Available
Norway regulations on action rvalues and limif values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian)	2-(2-butoksyethoxy)ethanol	2-2(butoksyetoksy)etanol	10 ppm / 68 mg/m3	Not Available	Not Available	E

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
phosphoric acid	Not Available	Not Available	Not Available
2-(2-butoksyethoxy)ethanol	30 ppm	33 ppm	200 ppm

Ingredient	Original IDLH	Revised IDLH
phosphoric acid	1,000 mg/m3	Not Available
2-(2-butoksyethoxy)ethanol	Not Available	Not Available

MATERIAL DATA

The saturated vapour concentration of phosphoric acid exceeds the TLV. The TLV-TWA is based by analogy from comparable experience and data for sulfuric acid. Exposure at or below this limit is thought to prevent throat irritation amongst unacclimatised workers.

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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. Individual protection measures, such as personal protective equipment









Eye and face protection

- ► Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Full face shield may be required for supplementary but never for primary protection of eyes.
- ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.

Skin protection

See Hand protection below

Hands/feet protection

- ▶ Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber
- ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

Body protection

See Other protection below

Other protection

- Overalls.
- ► Eyewash unit.
- ▶ Barrier cream.

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:

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Material	CPI
NAT+NEOPR+NITRILE	A
NATURAL RUBBER	A
NATURAL+NEOPRENE	A
NEOPRENE	A
NEOPRENE/NATURAL	A
NITRILE	A
NITRILE+PVC	A
PE	A
PVC	A
SARANEX-23	A

^{*} 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. -

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Yellow		
Physical state	Liquid	Relative density (Water = 1)	1.255-1.275

^{*} 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.

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Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	>100-760	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available BuAC = 1	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	2
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	 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 hazard classes as defined in Regulation (EC) No 1272/2008

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects. Relatively small amounts absorbed from the lungs may prove fatal.

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.

Inhaled

Strong evidence exists that exposure to the material may produce serious irreversible damage (other than carcinogenesis, mutagenesis and teratogenesis) following a single exposure by inhalation.

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.

Inhalation of phosphoric acid vapour or mist may cause choking, coughing, headache, weakness and dizziness. Prolonged or repeated inhalation of vapour or mist may cause pulmonary oedema (lung damage) and cyanosis

Exposure to high concentrations causes bronchitis and is characterised by the onset of haemorrhagic pulmonary oedema.

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The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

Strong evidence exists that exposure to the material may produce serious irreversible damage (other than carcinogenesis, mutagenesis and teratogenesis) following a single exposure by swallowing.

The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.

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.

Ingestion

Phosphates are slowly and incompletely absorbed from the gastrointestinal tract and are unlikely (other than in abuse) to produce the systemic effects which occur when introduced by other routes. Such effects include vomiting, lethargy, fever, diarrhoea, falls in blood pressure, slow pulse, cyanosis, carpal spasm, coma and tetany. These effects result following sequestration of blood calcium.

Ingestion of large quantity of phosphoric acid may cause severe abdominal pains, thirst, acidaemia, difficult breathing, convulsions, collapse, shock and death.

Although less hazardous than nitric and sulfuric acid, phosphoric acid has equal corrosive action upon ingestion. Death of an individual 19 days after ingestion of phosphoric acid was due to recurrent internal haemorrhage.

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

Skin Contact

Skin contact with the material may be harmful; systemic effects may result following absorption.

The material can produce chemical burns following direct contact with the skin.

Strong evidence exists that exposure to the material may produce serious irreversible damage (other than carcinogenesis, mutagenesis and teratogenesis) following a single exposure by skin contact.

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.

Open cuts, abraded or irritated skin should not be exposed to this material

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.

Eye

The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. Irritation of the eyes may produce a heavy secretion of tears (lachrymation).

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.

Chronic

Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

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.

Dogs given daily doses of sodium phosphate dibasic for 9-22 weeks showed calcium deposits in the kidneys (nephrocalcinosis) with disseminated atrophy of the proximal tubule. Animals fed on sodium phosphate dibasic and potassium dihydrogen phosphate, in both short- and long-term studies, showed increased bone porosity; hyperparathyroidism and soft tissue calcification were also evident.

TOXICITY IRRITATION **DISCLEAN** Not Available Not Available TOXICITY IRRITATION Dermal (rabbit) LD50: >1260 mg/kg^[2] Eye (rabbit): 119 mg - SEVERE [Monsanto]* Inhalation(Rat) LC50: 0.026 mg/L4h^[2] Eye: adverse effect observed (irritating)[1] phosphoric acid Oral (Rat) LD50: 1530 mg/kg[2] Skin (rabbit):595 mg/24h - SEVERE Skin: adverse effect observed (corrosive)^[1] **TOXICITY IRRITATION** Dermal (rabbit) LD50: 4120 mg/kg^[2] Eye (rabbit): 20 mg/24h moderate 2-(2-butoksyethoxy)ethanol Oral (Rat) LD50: 5660 mg/kg^[2] Eye (rabbit): 5 mg - SEVERE 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

PHOSPHORIC ACID

phosphoric acid (85%) No significant acute toxicological data identified in literature search.

The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis

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	(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.
2-(2-butoksyethoxy)ethanol	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.
DISCLEAN & PHOSPHORIC ACID	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. for acid mists, aerosols, vapours 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
PHOSPHORIC ACID & 2-(2-butoksyethoxy)ethanol	epithelium from its auto-secreted hydrochloric acid. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

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

Legend: X − 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

SECTION 12 Ecological information

12.1. Toxicity

	Endpoint	Test Duration (hr)		Species		Value	Source
DISCLEAN	Not Available	Not Available		Not Available		Not Available	Not Available
	Endpoint	Test Duration (hr)	S	pecies	Value	Э	Source
	EC50	72h	А	lgae or other aquatic plants	77.9r	ng/l	2
phosphoric acid	EC50	EC50 48h		Crustacea		mg/l	2
	LC50	50 96h		Fish		1-113.76mg/L	4
	NOEC(ECx) 72h		А	lgae or other aquatic plants	<7.5r	ng/l	2
	Endpoint	Test Duration (hr)		Species		Value	Source
	EC50	72h		Algae or other aquatic plants		1101mg/l	2
	EC50	48h		Crustacea		>100mg/l	1
2-(2-butoksyethoxy)ethanol	EC50	96h		Algae or other aquatic plants		>100mg/l	1
	LC50	96h		Fish		1300mg/l	2
	NOEC(ECx)	96h		Algae or other aquatic plants		>=100mg/l	1

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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

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

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

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 Phosphate: The principal problems of phosphate contamination of the environment relates to eutrophication processes in lakes and ponds. Phosphorus is an essential plant nutrient and is usually the limiting nutrient for blue-green algae.

Aquatic Fate: Lakes overloaded with phosphates is the primary catalyst for the rapid growth of algae in surface waters.

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
phosphoric acid	HIGH	HIGH
2-(2-butoksyethoxy)ethanol	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation	
phosphoric acid	LOW (LogKOW = -0.7699)	
2-(2-butoksyethoxy)ethanol	LOW (BCF = 0.46)	

12.4. Mobility in soil

Ingredient	Mobility
phosphoric acid	HIGH (KOC = 1)
2-(2-butoksyethoxy)ethanol	LOW (KOC = 10)

12.5. Results of PBT and vPvB assessment

	P	В	Т	
Relevant available data	Not Available	Not Available	Not Av	ailable
PBT	×	×	×	
vPvB	×	×	×	
PBT Criteria fulfilled?				
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.

Otherwise:

SECTION 13 Disposal considerations

13.1. Waste treatment methods

- ► Containers may still present a chemical hazard/ danger when empty.
- ▶ Return to supplier for reuse/ recycling if possible.

Product / Packaging

ackaging disposal

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- 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.

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	 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

NC

Land transport (ADR-RID)

and transport (ADIT INI	-,						
14.1. UN number or ID number	1805	1805					
14.2. UN proper shipping name	PHOSPHORIC ACID,	SOLUTION	I				
14.3. Transport hazard	Class	8					
class(es)	Subsidiary Hazard	Subsidiary Hazard Not Applicable					
14.4. Packing group	III						
14.5. Environmental hazard	Not Applicable						
	Hazard identification	(Kemler)	80				
	Classification code		C1				
14.6. Special precautions	Hazard Label		8				
for user	Special provisions	Special provisions					
	Limited quantity		5 L				
	Tunnel Restriction C	ode	E				

Air transport (ICAO-IATA / DGR)

14.1. UN number	1805				
14.2. UN proper shipping name	Phosphoric acid, solution				
	ICAO/IATA Class 8				
14.3. Transport hazard class(es)	ICAO / IATA Subsidiary Hazard	Not Applicable			
ciass(es)	ERG Code	8L			
14.4. Packing group	III				
14.5. Environmental hazard	Not Applicable				
	Special provisions		A3 A803		
	Cargo Only Packing Instructions		856		
	Cargo Only Maximum Qty / Pack		60 L		
14.6. Special precautions for user	Passenger and Cargo Packing Ir	structions	852		
ioi usci	Passenger and Cargo Maximum	Qty / Pack	5 L		
	Passenger and Cargo Limited Qu	uantity Packing Instructions	Y841		
	Passenger and Cargo Limited Ma	aximum Qtv / Pack	1 L		

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Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1805			
14.2. UN proper shipping name	PHOSPHORIC ACID	PHOSPHORIC ACID SOLUTION		
14.3. Transport hazard	IMDG Class	8		
class(es)	IMDG Subsidiary Ha	zard Not	Applicable	
14.4. Packing group	III			
14.5 Environmental hazard	Not Applicable			
	EMS Number	F-A, S-B		
14.6. Special precautions for user	Special provisions	223		
	Limited Quantities	5 L		

Inland waterways transport (ADN)

mana mater maye transp							
14.1. UN number	1805	1805					
14.2. UN proper shipping name	PHOSPHORIC ACID, S	PHOSPHORIC ACID, SOLUTION					
14.3. Transport hazard class(es)	8 Not Applicable	8 Not Applicable					
14.4. Packing group	III	III					
14.5. Environmental hazard	Not Applicable						
	Classification code	C1					
	Special provisions	Not Applicable					
14.6. Special precautions for user	Limited quantity	nited quantity 5 L					
ioi usei	Equipment required	ment 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
phosphoric acid	Not Available
2-(2-butoksyethoxy)ethanol	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
phosphoric acid	Not Available
2-(2-butoksyethoxy)ethanol	Not Available

SECTION 15 Regulatory information

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

phosphoric acid 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

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

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2-(2-butoksyethoxy)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

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

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

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

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

Seveso Category Not Available

15.2. Chemical safety assessment

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

National Inventory Status

National Inventory	Status		
Australia - AIIC / Australia Non-Industrial Use	Yes		
Canada - DSL	Yes		
Canada - NDSL	No (phosphoric acid; 2-(2-butoksyethoxy)ethanol)		
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		
Legend:	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

Revision Date	04/01/2022
Initial Date	02/05/2018

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: Compliance Manager, - Email: Email: wss.global.sdsinfo@wilhelmsen.com - Telephone: Tel.: +47 67584000

Full text Risk and Hazard codes

H319 Causes serious eye irritation.

SDS Version Summary

Version	Date of Update	Sections Updated
11.16	04/01/2022	Composition / information on ingredients - Ingredients

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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

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