

POOL POWER MULTI ACTION TABLETS

Wilhelmsen Ships Service AS

Part Number: 7753890

Version No: 2.2

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

Issue Date: 30/06/2022

Print Date: 28/11/2023

L.REACH.NOR.EN

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

1.1. Product Identifier

Product name	POOL POWER MULTI ACTION TABLETS
Chemical Name	Not Applicable
Synonyms	Product Part Number: 775395 (25kg plastic bucket) , 7753890
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains N',N',N'- trichloroisocyanuric acid)
Chemical formula	Not Applicable
Other means of identification	7753890, 775395

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

Relevant identified uses	The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
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	Wilhelmsen Ships Service AS	Outback (M)SDS portal: http://jr.chemwatch.net/outb/account/autologin?login=wilhelmsen	Wilhelmsen Ships Service AS* Central Warehouse
Address	Strandveien 20 Lysaker 1366 Norway	-----Use our Outback portal to obtain our (M)SDSs in other languages and/or format.----- For questions relating to our SDSs please use Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com ----- Norway	Willem Barentszstraat 50 Rotterdam Netherlands
Telephone	+47 67 58 40 00	Not Available	+31 10 4877 777
Fax	Not Available	Not Available	Not Available
Website	http://www.wilhelmsen.com/	http://www.wilhelmsen.com	http://www.wilhelmsen.com
Email	wss.norway.cs@wilhelmsen.com	wss.global.sdsinfo@wilhelmsen.com	wss.rotterdam@wilhelmsen.com

Registered company name	Wilhelmsen IT Services AS
Address	PO Box 33 Lysaker Norway NO-1324 Norway
Telephone	+47 67 58 40 00
Fax	+47 67 58 47 30
Website	http://www.wilhelmsen.com/
Email	wss.info@wilhelmsen.com

1.4. Emergency telephone number

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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	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+47 23 25 25 84
Other emergency telephone numbers	+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]	H302 - Acute Toxicity (Oral) Category 4, H315 - Skin Corrosion/Irritation Category 2, H318 - Serious Eye Damage/Eye Irritation Category 1, H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H341 - Germ Cell Mutagenicity Category 2, H400 - Hazardous to the Aquatic Environment Acute Hazard Category 1, H410 - Hazardous to the Aquatic Environment Long-Term Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

2.2. Label elements

Hazard pictogram(s)	
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Signal word	Danger
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Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H410	Very toxic to aquatic life with long lasting effects.

Supplementary statement(s)

EUH031	Contact with acids liberates toxic gas.
EUH059	Hazardous to ozone layer.
EUH206	Warning! Do not use together with other products. May release dangerous gases (chlorine).

CLP classification (additional)

Not Applicable

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P271	Use only a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary statement(s) Response

Continued...

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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.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.

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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2.3. Other hazards

Cumulative effects may result following exposure*.

Possible respiratory sensitizer*.

boric acid	Listed in the European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern for Authorisation
boric acid	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. 87-90-1 2.201-782-8 3.613-031-00-5 4.Not Available	50-100	<u>N',N',N'-trichloroisocyanuric acid</u>	Oxidizing Solids Category 2, Acute Toxicity (Oral) Category 4, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H272, H302, H319, H335, H400, H410 [2]	Not Available	Not Available
1. 10043-01-3 2.233-135-0 3.Not Available 4.Not Available	2.5-10	<u>aluminium sulfate</u>	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1A, Serious Eye Damage/Eye Irritation Category 1, Germ Cell Mutagenicity Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2; H302, H314, H318, H341, H411 [1]	Not Available	Not Available
1. 7758-99-8 2.Not Available 3.029-004-00-0 029-023-00-4 4.Not Available	2.5-10	<u>copper sulfate, pentahydrate</u>	Acute Toxicity (Oral) Category 4, Serious Eye Damage/Eye Irritation Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H302, H318, H400, H410 [2]	oral: ATE = 481 mg/kg bw M = 10 M = 1	Not Available
1. 10043-35-3 2.233-139-2 234-343-4 3.005-007-00-2 4.Not Available	<2.5	<u>boric acid</u>	Reproductive Toxicity Category 1B; H360FD [2]	Not Available	Not Available

Legend: 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties

SECTION 4 First aid measures

4.1. Description of first aid measures

Eye Contact	↳ Generally not applicable.
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Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▸ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▸ Quickly remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor. ▸ Generally not applicable.
Inhalation	<ul style="list-style-type: none"> ▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay. ▸ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▸ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▸ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▸ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p> <ul style="list-style-type: none"> ▸ Generally not applicable.
Ingestion	<ul style="list-style-type: none"> ▸ For advice, contact a Poisons Information Centre or a doctor at once. ▸ Urgent hospital treatment is likely to be needed. ▸ If swallowed do NOT induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Transport to hospital or doctor without delay. ▸ Generally not applicable.

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 copper intoxication:

- Unless extensive vomiting has occurred empty the stomach by lavage with water, milk, sodium bicarbonate solution or a 0.1% solution of potassium ferrocyanide (the resulting copper ferrocyanide is insoluble).
- Administer egg white and other demulcents.
- Maintain electrolyte and fluid balances.
- Morphine or meperidine (Demerol) may be necessary for control of pain.
- If symptoms persist or intensify (especially circulatory collapse or cerebral disturbances, try BAL intramuscularly or penicillamine in accordance with the supplier's recommendations.
- Treat shock vigorously with blood transfusions and perhaps vasopressor amines.
- If intravascular haemolysis becomes evident protect the kidneys by maintaining a diuresis with mannitol and perhaps by alkalinising the urine with sodium bicarbonate.
- It is unlikely that methylene blue would be effective against the occasional methaemoglobinemia and it might exacerbate the subsequent haemolytic episode.
- Institute measures for impending renal and hepatic failure.

[GOSSELIN, SMITH & HODGE: Commercial Toxicology of Commercial Products]

- A role for activated charcoals for emesis is, as yet, unproven.
- In severe poisoning CaNa₂EDTA has been proposed.

[ELLENHORN & BARCELOUX: Medical Toxicology]

Excellent warning properties force rapid escape of personnel from chlorine vapour thus most inhalations are mild to moderate. If escape is not possible, exposure to high concentrations for a very short time can result in dyspnea, haemophysis and cyanosis with later complications being tracheobroncho-pneumonitis and pulmonary oedema. Oxygen, intermittent positive pressure breathing apparatus and aerosolised bronchodilators are of therapeutic value where chlorine inhalation has been light to moderate. Severe inhalation should result in hospitalisation and treatment for a respiratory emergency.

Any chlorine inhalation in an individual with compromised pulmonary function (COPD) should be regarded as a severe inhalation and a respiratory emergency.

[CCINFO, Dow 1988]

Effects from exposure to chlorine gas include pulmonary oedema which may be delayed. Observation in hospital for 48 hours is recommended

Diagnosed asthmatics and those people suffering from certain types of chronic bronchitis should receive medical approval before being employed in occupations involving chlorine exposure.

If burn is present, treat as any thermal burn, after decontamination.

Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung oedema often do not manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorised by him/her should be considered.

(ICSC24419/24421

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SECTION 5 Firefighting measures

5.1. Extinguishing media

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water courses. <p>Slight hazard when exposed to heat, flame and oxidisers.</p>
Fire/Explosion Hazard	<p>Combustible. Will burn if ignited. Combustion products include:</p> <ul style="list-style-type: none"> , carbon monoxide (CO) , carbon dioxide (CO₂) , hydrogen chloride , phosgene , nitrogen oxides (NO_x) , sulfur oxides (SO_x) , metal oxides , other pyrolysis products typical of burning organic material. <p>May emit poisonous fumes. Articles and manufactured articles may constitute a fire hazard where polymers form their outer layers or where combustible packaging remains in place. Certain substances, found throughout their construction, may degrade or become volatile when heated to high temperatures. This may create a secondary hazard.</p>

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	<p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Secure load if safe to do so. ▶ Bundle/collect recoverable product.
Major Spills	<p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. <p>Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves.</p> <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Wear protective clothing, safety glasses, dust mask, gloves. ▶ Secure load if safe to do so.

6.4. Reference to other sections

POOL POWER MULTI ACTION TABLETS

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

SECTION 7 Handling and storage

7.1. Precautions for safe handling

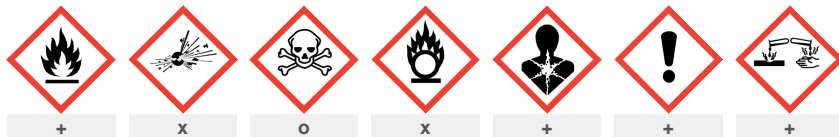
Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area.
Fire and explosion protection	See section 5
Other information	<p>Consider storage under inert gas.</p> <ul style="list-style-type: none"> ▶ Material is hygroscopic, i.e. absorbs moisture from the air. Keep containers well sealed in storage. ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<p>Generally packaging as originally supplied with the article or manufactured item is sufficient to protect against physical hazards. If repackaging is required ensure the article is intact and does not show signs of wear. As far as is practicably possible, reuse the original packaging or something providing a similar level of protection to both the article and the handler.</p> <ul style="list-style-type: none"> ▶ Glass container is suitable for laboratory quantities <p>For low viscosity materials</p> <ul style="list-style-type: none"> ▶ Drums and jerricans must be of the non-removable head type. ▶ Where a can is to be used as an inner package, the can must have a screwed enclosure. <p>For materials with a viscosity of at least 2680 cSt.</p> <p>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.</p> <p>No restriction on the type of containers. Packing as recommended by manufacturer. Check all material is clearly labelled.</p>
Storage incompatibility	<ul style="list-style-type: none"> ▶ Contact with acids produces toxic fumes <p>Inorganic derivative of Group 11 metal.</p> <p>Aluminium sulfate</p> <ul style="list-style-type: none"> ▶ forms sulfuric acid in water ▶ reacts violently with bases and many other materials ▶ dry material is weakly corrosive to carbon steel; aqueous solution attacks aluminium and other metals forming hydrogen gas <p>The substance may be or contains a "metalloid"</p> <p>The following elements are considered to be metalloids; boron, silicon, germanium, arsenic, antimony, tellurium and (possibly) polonium</p> <p>The electronegativities and ionisation energies of the metalloids are between those of the metals and nonmetals, so the metalloids exhibit characteristics of both classes. The reactivity of the metalloids depends on the element with which they are reacting. For example, boron acts as a nonmetal when reacting with sodium yet as a metal when reacting with fluorine.</p> <p>Trichloroisocyanuric acid:</p> <ul style="list-style-type: none"> ▶ is a powerful oxidiser and reacts violently with reducing agents ▶ reacts with acrolein, antimony trisulfide, antimony tritelluride, arsenic pentasulfide, calcium hypochlorite and other bleaching agents, 1,1-dichloro-1-nitroethane, 1,3-dichloropropene, diethylamine, mineral oils and other combustible substance, s-trioxane ▶ is incompatible with m-bis(trichloromethyl)benzene ▶ reacts with nitrogen-containing compounds such as ammonia, amines, urea, forming the unstable explosive nitrogen trichloride ▶ may ignite combustible materials on contact <p>NOTE: If mixed with a small amount of water, the concentrated solution (with pH around 2) may explode, owing to the evolution of nitrogen trichloride. It is thought that hydrolysis leads to the formation of hypochlorous acid and dichloro-s-triazinetrione, and the protonated acid then attacks the C=N bonds in the triazine ring leading to the formation of chloramine and nitrogen trichloride. The dichloro compound is stable to acid in the absence of hypochlorous acid</p> <p>Chlorine:</p> <ul style="list-style-type: none"> ▶ is a strong oxidiser ▶ reacts explosively with acetylene, boron, diborane, or other boron hydrides at ordinary temperatures ▶ forms easily ignited, sensitive explosive mixtures with gases and vapours such as anhydrous ammonia, benzene, butane, ethane, ethylene, fluorine, hydrocarbons, formaldehyde, hydrogen, hydrogen bromide, hydrogen chloride, oxygen, propane, propene in the presence of heat, hot surfaces, welding arc, sparks, strong sunlight, UV light, or a catalyst such as mercury oxide ▶ contact with 2-carboxymethylisothiuronium chloride or s-ethylisothiuronium hydrogen sulfate may form nitrogen trichloride. a dangerous explosive ▶ reacts violently with combustible materials, reducing agents, acetylene, molten aluminium (ignites on contact with the gas), alcohols, arsenic compounds, arsine, bismuth, boron, calcium compounds, carbon, diethylzinc, dimethylformamide, ether, ethyl phosphine, fluorine, germanium, hydrocarbons, hydrazine, hydrogen sulfide, hydroxylamine, iridium, lithium, lithium

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	<p>acetylide, magnesium, magnesium oxide, magnesium phosphide, mercury sulfide, methyl vinyl ether, metal carbides, molybdenum trioxide, potassium acetylide, sodium acetylide, sulfamic, sulfur dioxide, triethylborane and many other substances</p> <ul style="list-style-type: none"> ▶ forms explosive mixtures with gasoline and petroleum products, such as mineral oil, greases, phosphorus, silicones, turpentine, finely divided metals, organic compounds ▶ in its liquid form reacts explosively with carbon disulfide, linseed oil, propylene, rubber, wax, white phosphorus ▶ attacks some plastics and coatings ▶ may cause dangerous fires in contact with hot solid metals (especially steel - iron/ chlorine fire can cause the bursting of storage containers) ▶ when moist (150 ppm in water) is extremely corrosive to most metals especially in the presence of heat. ▶ reacts with water to give hydrogen chloride, with carbon monoxide to form phosgene, and with sulfur dioxide to give sulfuryl chloride <p>Chlorine storage areas shall be separated from anhydrous ammonia storage areas by a vapour path of at least 10 meters</p> <ul style="list-style-type: none"> ▶ In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas. ▶ Many compounds containing more than one N-halogen bond are unstable and exhibit explosive properties. <p>BREThERICK L.: Handbook of Reactive Chemical Hazards</p> <ul style="list-style-type: none"> ▶ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous <p>Copper sulfate:</p> <ul style="list-style-type: none"> ▶ reacts violently with strong bases, hydroxylamine.(with ignition), magnesium (producing hydrogen gas) ▶ in contact with potassium chlorate is potentially explosive ▶ solutions are acidic and can react with metals to evolve flammable hydrogen gas. - corrosive to some metals including steel. ▶ is incompatible with sulfuric acid, caustics, ammonia, aliphatic amines, alkanolamines, amides, alkylene oxides, epichlorohydrin, organic anhydrides, isocyanates, vinyl acetate ▶ dusts or mists may react with acetylene to form shock-sensitive copper acetylides ▶ Avoid storage with reducing agents.
Hazard categories in accordance with Regulation (EC) No 1272/2008	E1: Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	E1 Lower- / Upper-tier requirements: 100 / 200



X — Must not be stored together
 O — May be stored together with specific precautions
 + — 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
N',N',N'- trichloroisocyanuric acid	Dermal 2.28 mg/kg bw/day (Systemic, Chronic) Inhalation 8.04 mg/m ³ (Systemic, Chronic) Dermal 1.14 mg/kg bw/day (Systemic, Chronic) * Inhalation 1.98 mg/m ³ (Systemic, Chronic) * Oral 1.14 mg/kg bw/day (Systemic, Chronic) *	0 mg/L (Water (Fresh)) 0.002 mg/L (Water - Intermittent release) 1.52 mg/L (Water (Marine)) 7.56 mg/kg sediment dw (Sediment (Fresh Water)) 0.756 mg/kg sediment dw (Sediment (Marine)) 0.756 mg/kg soil dw (Soil) 0.59 mg/L (STP)
aluminium sulfate	Dermal 1.71 mg/kg bw/day (Systemic, Chronic) Inhalation 3 mg/m ³ (Systemic, Chronic) Dermal 0.882 mg/cm ² (Local, Chronic) Inhalation 3 mg/m ³ (Local, Chronic) Dermal 46.7 mg/kg bw/day (Systemic, Acute) Inhalation 2 mg/m ³ (Systemic, Acute) Dermal 0.882 mg/cm ² (Local, Acute)	4.5 mg/L (Water (Fresh)) 30.11 mg/L (Water - Intermittent release) 64 mg/L (Water (Marine)) 10 mg/kg sediment dw (Sediment (Fresh Water)) 31.4 mg/kg sediment dw (Sediment (Marine)) 58 mg/kg soil dw (Soil) 60.2 mg/L (STP)

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Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
	Inhalation 2 mg/m ³ (Local, Acute) Dermal 0.855 mg/kg bw/day (Systemic, Chronic) * Inhalation 1.5 mg/m ³ (Systemic, Chronic) * Oral 1.9 mg/kg bw/day (Systemic, Chronic) * Dermal 0.441 mg/cm ² (Local, Chronic) * Inhalation 1.5 mg/m ³ (Local, Chronic) * Dermal 23.35 mg/kg bw/day (Systemic, Acute) * Inhalation 1 mg/m ³ (Systemic, Acute) * Oral 92.4 mg/kg bw/day (Systemic, Acute) * Dermal 0.441 mg/cm ² (Local, Acute) * Inhalation 1 mg/m ³ (Local, Acute) *	150 mg/kg food (Oral)
copper sulfate, pentahydrate	Dermal 0.34 mg/kg bw/day (Systemic, Chronic) Inhalation 0.12 mg/m ³ (Systemic, Chronic) Inhalation 1 mg/m ³ (Local, Chronic) Oral 0.041 mg/kg bw/day (Systemic, Chronic) * Oral 0.082 mg/kg bw/day (Systemic, Acute) *	7.8 µg/L (Water (Fresh)) 5.2 µg/L (Water (Marine)) 87 mg/kg sediment dw (Sediment (Fresh Water)) 676 mg/kg sediment dw (Sediment (Marine)) 65 mg/kg soil dw (Soil) 230 µg/L (STP)
boric acid	Dermal 392 mg/kg bw/day (Systemic, Chronic) Inhalation 8.3 mg/m ³ (Systemic, Chronic) Dermal 196 mg/kg bw/day (Systemic, Chronic) * Inhalation 4.15 mg/m ³ (Systemic, Chronic) * Oral 0.98 mg/kg bw/day (Systemic, Chronic) * Oral 0.98 mg/kg bw/day (Systemic, Acute) *	2.9 mg/L (Water (Fresh)) 13.7 mg/L (Water - Intermittent release) 2.9 mg/L (Water (Marine)) 5.7 mg/kg soil dw (Soil) 10 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian)	aluminium sulfate	Aluminiumløselige salter (beregnet som Al)	2 mg/m ³	Not Available	Not Available	Not Available
Europe ECHA Occupational exposure limits substance evaluations	boric acid	Not Available	Not Available	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
N',N',N'- trichloroisocyanuric acid	1.2 mg/m ³	13 mg/m ³	80 mg/m ³
aluminium sulfate	38 mg/m ³	64 mg/m ³	380 mg/m ³
copper sulfate, pentahydrate	7.5 mg/m ³	9.9 mg/m ³	59 mg/m ³
copper sulfate, pentahydrate	12 mg/m ³	32 mg/m ³	190 mg/m ³
boric acid	6 mg/m ³	23 mg/m ³	830 mg/m ³

Ingredient	Original IDLH	Revised IDLH
N',N',N'- trichloroisocyanuric acid	Not Available	Not Available
aluminium sulfate	Not Available	Not Available
copper sulfate, pentahydrate	Not Available	Not Available
boric acid	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
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Notes:

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

Continued...

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Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
N',N',N'- trichloroisocyanuric acid	E	≤ 0.01 mg/m ³
copper sulfate, pentahydrate	E	≤ 0.01 mg/m ³
Notes:	<i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i>	

MATERIAL DATA

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

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

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

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

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

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

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= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

ClassOSF 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 26-550As "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

NOTE: Detector tubes for sulfuric acid, measuring in excess of 1 mg/m³, are commercially available.

Based on controlled inhalation studies the TLV-TWA is thought to be protective against the significant risk of pulmonary irritation and incorporates a margin of safety so as to prevent injury to the skin and teeth seen in battery workers acclimatised to workplace concentrations of 16 mg/m³. Experimental evidence in normal unacclimated humans indicates the recognition, by all subjects, of odour, taste or irritation at 3 mg/m³ or 5 mg/m³.

for chlorine:


Odour Threshold Value: 0.08 ppm (detection) - olfactory fatigue may develop

NOTE: Detector tubes for chlorine, measuring in excess of 0.2 ppm, are commercially available. Long-term measurements (8 hrs) may be conducted to detect concentrations exceeding 0.13 ppm.

Smell is not a good indicator of severity of exposure in the range 0.5 to 2 ppm.

The TLV is based on the exposures to aluminium chloride and the amount of hydrolysed acid and the corresponding acid TLV to provide the same degree of freedom from irritation. Workers chronically exposed to aluminium dusts and fumes have developed severe pulmonary reactions including fibrosis, emphysema and pneumothorax. A much rarer encephalopathy has also been described.

8.2. Exposure controls

<p>8.2.1. Appropriate engineering controls</p>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Articles or manufactured items, in their original condition, generally don't require engineering controls during handling or in normal use.</p> <p>Exceptions may arise following extensive use and subsequent wear, during recycling or disposal operations where substances, found in the article, may be released to the environment.</p>
<p>8.2.2. Individual protection measures, such as personal protective equipment</p>	
<p>Eye and face protection</p>	<ul style="list-style-type: none"> ▶ 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.

POOL POWER MULTI ACTION TABLETS

	No special equipment required due to the physical form of the product. <ul style="list-style-type: none"> ▸ Safety glasses with side shields. ▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▸ 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 general protective gloves, eg. light weight rubber gloves. NOTE: <ul style="list-style-type: none"> ▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▸ Overalls. ▸ Eyewash unit. ▸ Barrier cream. No special equipment required due to the physical form of the product.

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:

POOL POWER MULTI ACTION TABLETS

Material	CPI
BUTYL	A
NEOPRENE	A
NITRILE	A
VITON	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. -

* 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.

Ansell Glove Selection

Glove — In order of recommendation
AlphaTec® 15-554
AlphaTec® Solvex® 37-185
AlphaTec® 38-612
AlphaTec® 58-008
AlphaTec® 58-530B
AlphaTec® 58-530W
AlphaTec® 58-735
AlphaTec® 79-700
AlphaTec® Solvex® 37-675
DermaShield™ 73-711

The suggested gloves for use should be confirmed with the glove supplier.

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

Respiratory protection

Type AB-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	AB-AUS P2	-	AB-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AB-AUS / Class 1 P2	-
up to 100 x ES	-	AB-2 P2	AB-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(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Respiratory protection not normally required due to the physical form of the product.

76ab-p()

Class P2 particulate filters are used for protection against mechanically and thermally generated particulates or both.

P2 is a respiratory filter rating under various international standards, Filters at least 94% of airborne particles

Suitable for:

- Relatively small particles generated by mechanical processes eg. grinding, cutting, sanding, drilling, sawing.
- Sub-micron thermally generated particles e.g. welding fumes, fertilizer and bushfire smoke.
- Biologically active airborne particles under specified infection control applications e.g. viruses, bacteria, COVID-19, SARS

POOL POWER MULTI ACTION TABLETS

9.1. Information on basic physical and chemical properties

Appearance	white, Tablets		
Physical state	Manufactured	Relative density (Water = 1)	950 kg/m ³ at 20 deg C(Bulk density)
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	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 Applicable
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Available
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	<ul style="list-style-type: none"> ▶ Extremely high temperatures. ▶ 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

Inhaled	<p>Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs.</p> <p>The vapour from wet or damp N',N',N'-trichloroisocyanuric acid is highly irritating due to the generation of chlorine gas. Chlorine vapour is extremely irritating to the upper respiratory tract and lungs</p> <p>Symptoms of exposure to chlorine include coughing, choking, breathing difficulty, chest pain, headache, vomiting, pulmonary oedema. Inhalation may cause lung congestion, bronchitis and loss of consciousness. Effects may be delayed.</p> <p>Copper poisoning following exposure to copper dusts and fume may result in headache, cold sweat and weak pulse. Capillary,</p>
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	<p>kidney, liver and brain damage are the longer term manifestations of such poisoning. Inhalation of freshly formed metal oxide particles sized below 1.5 microns and generally between 0.02 to 0.05 microns may result in "metal fume fever". Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful.</p> <p>Common, generalised symptoms associated with toxic gas inhalation include:</p> <ul style="list-style-type: none"> ▸ central nervous system effects such as depression, headache, confusion, dizziness, progressive stupor, coma and seizures; ▸ respiratory system complications may include acute pulmonary oedema, dyspnoea, stridor, tachypnoea, bronchospasm, wheezing and other reactive airway symptoms, and respiratory arrest; ▸ cardiovascular effects may include cardiovascular collapse, arrhythmias and cardiac arrest; ▸ gastrointestinal effects may also be present and may include mucous membrane irritation, nausea and vomiting (sometimes bloody), and abdominal pain. <p>The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.</p>
Ingestion	<p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. Acute toxic responses to aluminium are confined to the more soluble forms.</p> <p>The material has NOT 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.</p> <p>Numerous cases of a single oral exposure to high levels of copper have been reported. Consumption of copper-contaminated drinking water has been associated with mainly gastrointestinal symptoms including nausea, abdominal pain, vomiting and diarrhoea. A metallic taste, nausea, vomiting and epigastric burning often occur after ingestion of copper and its derivatives.</p> <p>Ingestion or percutaneous absorption of boric acid causes nausea, abdominal pain, diarrhoea and violent vomiting, sometimes bloody, which may be accompanied by headache and weakness, and characteristic erythematous (abnormally red) lesions on the skin. In severe cases, shock with fall in arterial pressure, tachycardia (increase in heart rate) and cyanosis (blue skin colour) may occur. Marked central nervous system irritation, oliguria (small volume of urine), and anuria (absence of or defective excretion of urine) may be present.</p> <p>Symptoms of borate poisoning include nausea, vomiting, diarrhoea, epigastric pain. These may be accompanied headache, weakness and a distinctive red skin rash. In severe cases there may be shock, increased heart rate and the skin may appear blue.</p> <p>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.</p>
Skin Contact	<p>The material can produce chemical burns following direct contact with the skin.</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Boric acid is not absorbed through intact skin but is readily absorbed through areas of damaged, abraded, burned skin, areas of active dermatitis</p> <p>Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction</p> <p>Exposure to copper, by skin, has come from its use in pigments, ointments, ornaments, jewellery, dental amalgams and IUDs and as an antifungal agent and an algicide. Although copper algicides are used in the treatment of water in swimming pools and reservoirs, there are no reports of toxicity from these applications. Reports of allergic contact dermatitis following contact with copper and its salts have appeared in the literature, however the exposure concentrations leading to any effect have been poorly characterised.</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> <p>The material produces moderate skin irritation; evidence exists, or practical experience predicts, that the material either</p> <ul style="list-style-type: none"> ▸ produces moderate inflammation of the skin in a substantial number of individuals following direct contact, and/or ▸ produces significant, but moderate, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period. <p>Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis.</p>
Eye	<p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</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>Copper salts, in contact with the eye, may produce conjunctivitis or even ulceration and turbidity of the cornea.</p>
Chronic	<p>Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur.</p> <p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p> <p>Strong evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.</p> <p>Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.</p> <p>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms.</p> <p>Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.</p> <p>Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be</p>

caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests.

There is sufficient evidence to provide a strong presumption that human exposure to the material may result in impaired fertility on the basis of: - clear evidence in animal studies of impaired fertility in the absence of toxic effects, or evidence of impaired fertility occurring at around the same dose levels as other toxic effects but which is not a secondary non-specific consequence of other toxic effects.

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

Occupational exposure to aluminium compounds may produce asthma, chronic obstructive lung disease and pulmonary fibrosis. Long-term overexposure may produce dyspnoea, cough, pneumothorax, variable sputum production and nodular interstitial fibrosis; death has been reported. Chronic interstitial pneumonia with severe cavitations in the right upper lung and small cavities in the remaining lung tissue, have been observed in gross pathology.

For copper and its compounds (typically copper chloride):

Acute toxicity: There are no reliable acute oral toxicity results available. Animal testing shows that skin in exposure to copper may lead to hardness of the skin, scar formation, exudation and reddish changes. Inflammation, irritation and injury of the skin were noted.

Reduced respiratory capacity may result from chronic low level exposure to chlorine gas. Chronic poisoning may result in coughing, severe chest pains, sore throat and haemoptysis (bloody sputum). Moderate to severe exposures over 3 years produced decreased lung capacity in a number of workers.

Chronic boric acid poisoning is characterized by mild gastrointestinal irritation, loss of appetite, disturbed digestion, nausea, possibly vomiting and a hard blotchy rash. Dryness of skin, reddening of tongue, loss of hair, conjunctivitis, and kidney injury have also been reported.

[Occupational Diseases]

Long term exposure to boric acid may be of more concern, causes kidney damage and eventually kidney failure.

Chronic poisoning by borates may be characterised gastrointestinal disturbances and skin rash. Chronic absorption of small amounts of borax causes mild gastroenteritis and dermatitis.

Chronic feeding studies involving borate administration to rats and dogs leads to accumulation in the testes, germ cell depletion and testicular atrophy.

POOL POWER MULTI ACTION TABLETS	TOXICITY	IRRITATION
	Not Available	Not Available
N',N',N'-trichloroisocyanuric acid	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[1]	Eye (rabbit): 3125 mg - moderate
	Inhalation(Rat) LC50: >0.09<0.29 mg/l4h ^[1]	Eye (rabbit): 50 ug/24h SEVERE
	Oral (Rat) LD50: 406 mg/kg ^[2]	Eye: adverse effect observed (irritating) ^[1]
		Eye: no adverse effect observed (not irritating) ^[1]
		Skin (rabbit): 500 mg - SEVERE
		Skin (rabbit): 500 mg/24h-moderate
		Skin: adverse effect observed (corrosive) ^[1]
aluminium sulfate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1167.5 mg/kg ^[1]	Eye (rabbit): 10 mg/24h SEVERE
	Inhalation(Rat) LC50: >5 mg/l4h ^[1]	
	Oral (Rat) LD50: >2000 mg/kg ^[1]	
copper sulfate, pentahydrate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[2]	Not Available
	Oral (Mouse) LD50; 43 mg/kg ^[2]	
boric acid	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50: >2.12 mg/l4h ^[1]	Skin (human): 15 mg/3d -I- mild
	Oral (Rat) LD50: >2600 mg/kg ^[1]	Skin: no adverse effect observed (not irritating) ^[1]
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	

POOL POWER MULTI ACTION TABLETS

ACTION TABLETS	Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.
N',N',N'-TRICHLOROISOCYANURIC ACID	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
ALUMINIUM SULFATE	Oral (rat) TDLo: 10138 mg/kg/8D-C 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 epithelium from its auto-secreted hydrochloric acid.
COPPER SULFATE, PENTAHYDRATE	for copper and its compounds (typically copper chloride): Acute toxicity: There are no reliable acute oral toxicity results available. In an acute dermal toxicity study (OECD TG 402), one group of 5 male rats and 5 groups of 5 female rats received doses of 1000, 1500 and 2000 mg/kg bw via dermal application for 24 hours. The LD50 values of copper monochloride were 2,000 mg/kg bw or greater for male (no deaths observed) and 1,224 mg/kg bw for female.
BORIC ACID	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
POOL POWER MULTI ACTION TABLETS & ALUMINIUM SULFATE	Exposure to the material may result in a possible risk of irreversible effects. The material may produce mutagenic effects in man. This concern is raised, generally, on the basis of appropriate studies using mammalian somatic cells in vivo. For aluminium compounds: Aluminium present in food and drinking water is poorly absorbed through the gastrointestinal tract. The bioavailability of aluminium is dependent on the form in which it is ingested and the presence of dietary constituents with which the metal cation can complex Ligands in food can have a marked effect on absorption of aluminium, as they can either enhance uptake by forming absorbable (usually water soluble) complexes (e.g., with carboxylic acids such as citric and lactic), or reduce it by forming insoluble compounds (e.g., with phosphate or dissolved silicate). Considering the available human and animal data it is likely that the oral absorption of aluminium can vary 10-fold based on chemical form alone. Although bioavailability appears to generally parallel water solubility, insufficient data are available to directly extrapolate from solubility in water to bioavailability. For oral intake from food, the European Food Safety Authority (EFSA) has derived a tolerable weekly intake (TWI) of 1 milligram (mg) of aluminium per kilogram of bodyweight.
POOL POWER MULTI ACTION TABLETS & N',N',N'-TRICHLOROISOCYANURIC ACID & ALUMINIUM SULFATE	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.
POOL POWER MULTI ACTION TABLETS & COPPER SULFATE, PENTAHYDRATE	For copper sulfate ▸ Acute toxicity: Copper sulfate is corrosive and acute toxicity is largely due to this property. There have been reports of human suicide resulting from the ingestion of gram quantities of this material. The lowest dose of copper sulfate that has been toxic when ingested by humans is 11 mg/kg.

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

SECTION 12 Ecological information

12.1. Toxicity

POOL POWER MULTI ACTION TABLETS	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
N',N',N'-trichloroisocyanuric acid	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	<0.1	7
	EC50	72h	Algae or other aquatic plants	>100mg/l	2
	EC50	48h	Crustacea	0.16-0.18mg/L	4
	EC50	96h	Algae or other aquatic plants	655mg/l	2
	NOEC(ECx)	96h	Fish	0.056mg/l	2
LC50	96h	Fish	0.06-0.11mg/L	4	
aluminium sulfate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	0.005mg/L	2
	EC50	72h	Algae or other aquatic plants	0.017mg/L	2
	EC50	48h	Crustacea	0.33mg/l	2
	LC50	96h	Fish	>0.42mg/l	2
EC50(ECx)	120h	Fish	<0.001mg/L	5	
copper sulfate, pentahydrate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	0.8mg/L	5
	EC50	48h	Crustacea	0.003mg/L	5
	EC50(ECx)	96h	Crustacea	0.001mg/L	5
LC50	96h	Fish	0.073mg/L	4	
boric acid	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	15.4mg/l	2
	BCF	672h	Fish	<3.2	7
	EC50	72h	Algae or other aquatic plants	40.2mg/l	2
	EC50	48h	Crustacea	230mg/L	5
	LC50	96h	Fish	70-80mg/l	4
NOEC(ECx)	576h	Fish	0.001mg/L	5	
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 the available evidence concerning properties and predicted or observed environmental fate and behavior, the material may present a danger to the structure and/ or functioning of the stratospheric ozone layer.

Very toxic 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.

For chlorine:

Environmental fate:

Atmospheric chlorine produced as a result of such process as disinfection forms hydrochloric (HCl) or hypochlorous (HOCl) acid in the atmosphere, either through reactions with hydroxy radicals or other trace species such as hydrocarbons. These acids are believed to be removed from the atmosphere primarily through precipitation washout (i.e. wet deposition as chlorine is scrubbed out by rain in the subcloud layer) or dry deposition as gaseous chlorine contacts and reacts with the earth's surface.

Water chlorination, resulting from municipal and industrial wastewater treatment and cooling water disinfection, initially introduces chlorine into the water as chlorine gas, hypochlorite ion (OCl⁻), or its salt.

For copper sulfate:

Cupric Sulfate is a Severe Marine Pollutant (49 CFR 172.322) and requires the marine pollutant mark for vessel transportation. Because Copper Sulfate is listed as a Severe Marine Pollutant as found in Appendix B to 172.101 and when shipped by vessel, each inner package which exceeds 500 g (17.6 oz) will need a marine pollutant marking, UN certified package, marked with the Proper Shipping Name, UN Number will be required when shipped by vessel, when each inner package exceeds 500 g (17.6 oz).

Environmental fate:

Continued...

If released to soil, copper sulfate may leach to groundwater, be partly oxidised or bind to humic materials, clay or hydrous oxides of iron and manganese.

For copper:

Atmospheric Fate - Copper is unlikely to accumulate in the atmosphere due to a short residence time for airborne copper aerosols. Airborne coppers, however, may be transported over large distances. Air Quality Standards: no data available.

For copper: Ecotoxicity - Significant effects are expected on various species of microalgae, some species of macroalgae, and a range of invertebrates, including crustaceans, gastropods and sea urchins. Copper is moderately toxic to crab and their larvae and is highly toxic to gastropods (mollusks, including oysters, mussels and clams). In fish, the acute lethal concentrations of copper depends both on test species and exposure conditions.

for inorganic sulfates:

Environmental fate:

Data from tap water studies with human volunteers indicate that sulfates produce a laxative effect at concentrations of 1000 - 1200 mg/litre, but no increase in diarrhoea, dehydration or weight loss. The presence of sulfate in drinking-water can also result in a noticeable taste; the lowest taste threshold concentration for sulfate is approximately 250 mg/litre as the sodium salt. Sulfate may also contribute to the corrosion of distribution systems.

For Copper: Typical foliar levels of copper are: Uncontaminated soils (0.3-250 mg/kg) ; Contaminated soils (150-450 mg/kg) ; Mining/smelting soils (6.1-25 mg/kg)

Terrestrial Fate: Plants - Generally, vegetation reflects soil copper levels in its foliage. This is dependent upon the bioavailability of copper and the physiological requirements of species concerned.

For boron and borates:

Environmental fate:

Boron is generally found in nature bound to oxygen and is never found as the free element. Atmospheric boron may be in the form of particulate matter or aerosols as borides, boron oxides, borates, boranes, organoboron compounds, trihalide boron compounds, or borazines. Borates are relatively soluble in water, and will probably be removed from the atmosphere by precipitation and dry deposition.

For aluminium and its compounds and salts:

Despite its prevalence in the environment, no known form of life uses aluminium salts metabolically. In keeping with its pervasiveness, aluminium is well tolerated by plants and animals. Owing to their prevalence, potential beneficial (or otherwise) biological roles of aluminium compounds are of continuing interest.

Environmental fate:

Aluminium occurs in the environment in the form of silicates, oxides and hydroxides, combined with other elements such as sodium, fluorine and arsenic complexes with organic matter.

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
N',N',N'- trichloroisocyanuric acid	HIGH	HIGH
aluminium sulfate	HIGH	HIGH
copper sulfate, pentahydrate	HIGH	HIGH
boric acid	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
N',N',N'- trichloroisocyanuric acid	LOW (BCF = 0.5)
aluminium sulfate	LOW (LogKOW = -2.2002)
copper sulfate, pentahydrate	LOW (LogKOW = -2.2002)
boric acid	LOW (BCF = 0)

12.4. Mobility in soil

Ingredient	Mobility
N',N',N'- trichloroisocyanuric acid	LOW (KOC = 48.36)
aluminium sulfate	LOW (KOC = 6.124)
copper sulfate, pentahydrate	LOW (KOC = 6.124)
boric acid	LOW (KOC = 35.04)

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

Continued...

vPvB

No

12.6. Endocrine disrupting properties

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



12.7. Other adverse effects

One or more ingredients within this SDS has the potential of causing ozone depletion and/or photochemical ozone creation.

SECTION 13 Disposal considerations**13.1. Waste treatment methods**

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

SECTION 14 Transport information**Labels Required**

	
Marine Pollutant	

Land transport (ADR-RID)

14.1. UN number or ID number	3077	
14.2. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains N',N',N'- trichloroisocyanuric acid)	
14.3. Transport hazard class(es)	Class	9
	Subsidiary Hazard	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Hazard identification (Kemler)	90
	Classification code	M7
	Hazard Label	9
	Special provisions	274 335 375 601
	Limited quantity	5 kg
	Tunnel Restriction Code	Not Applicable

Air transport (ICAO-IATA / DGR)

14.1. UN number	3077
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POOL POWER MULTI ACTION TABLETS

14.2. UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (contains N',N',N'- trichloroisocyanuric acid)	
14.3. Transport hazard class(es)	ICAO/IATA Class	9
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	9L
14.4. Packing group	III	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	A97 A158 A179 A197 A215
	Cargo Only Packing Instructions	956
	Cargo Only Maximum Qty / Pack	400 kg
	Passenger and Cargo Packing Instructions	956
	Passenger and Cargo Maximum Qty / Pack	400 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y956
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	3077	
14.2. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains N',N',N'- trichloroisocyanuric acid)	
14.3. Transport hazard class(es)	IMDG Class	9
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Marine Pollutant	
14.6. Special precautions for user	EMS Number	F-A, S-F
	Special provisions	274 335 966 967 969
	Limited Quantities	5 kg

Inland waterways transport (ADN)

14.1. UN number	3077	
14.2. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains N',N',N'- trichloroisocyanuric acid)	
14.3. Transport hazard class(es)	9	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Classification code	M7
	Special provisions	274; 335; 375; 601
	Limited quantity	5 kg
	Equipment required	PP, A***
	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
N',N',N'- trichloroisocyanuric	Not Available

Continued...

POOL POWER MULTI ACTION TABLETS

Product name	Group
acid	
aluminium sulfate	Not Available
copper sulfate, pentahydrate	Not Available
boric acid	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
N',N',N'- trichloroisocyanuric acid	Not Available
aluminium sulfate	Not Available
copper sulfate, pentahydrate	Not Available
boric acid	Not Available

SECTION 15 Regulatory information

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

N',N',N'- trichloroisocyanuric acid is found on the following regulatory lists

Europe EC Inventory
 European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
 European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

aluminium sulfate is found on the following regulatory lists

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

copper sulfate, pentahydrate is found on the following regulatory lists

Europe EC Inventory
 European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
 European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

boric acid is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
 EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 6) Reproductive toxicants: Category 1 B
 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
 EU REACH Regulation (EC) No 1907/2006 - Proposals to identify Substances of Very High Concern: Annex XV reports for commenting by Interested Parties previous consultation
 Europe EC Inventory
 Europe European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern for Authorisation
 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

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):

Seveso Category	E1

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 (N',N',N'- trichloroisocyanuric acid; aluminium sulfate; copper sulfate, pentahydrate; boric acid)
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	30/06/2022
Initial Date	17/06/2016

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 - Telephone: Tel.: +47 67584000

Full text Risk and Hazard codes

H272	May intensify fire; oxidiser.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H360FD	H360FD
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

SDS Version Summary

Version	Date of Update	Sections Updated
1.2	30/06/2022	Toxicological information - Acute Health (eye), Toxicological information - Acute Health (inhaled), Toxicological information - Acute Health (skin), Toxicological information - Acute Health (swallowed), Toxicological information - Chronic Health, Hazards identification - Classification, Disposal considerations - Disposal, Exposure controls / personal protection - Engineering Control, Ecological Information - Environmental, Exposure controls / personal protection - Exposure Standard, Firefighting measures - Fire Fighter (extinguishing media), Firefighting measures - Fire Fighter (fire/explosion hazard), Firefighting measures - Fire Fighter (fire fighting), Firefighting measures - Fire Fighter (fire incompatibility), First Aid measures - First Aid (inhaled), First Aid measures - First Aid (skin), First Aid measures - First Aid (swallowed), Handling and storage - Handling Procedure, Composition / information on ingredients - Ingredients, Stability and reactivity - Instability Condition, Exposure controls / personal protection - Personal Protection (other), Exposure controls / personal protection - Personal Protection (Respirator), Exposure controls / personal protection - Personal Protection (hands/feet), Accidental release measures - Spills (major), Accidental release measures - Spills (minor), Handling and storage - Storage (storage incompatibility), Handling and storage - Storage (storage requirement), Handling and storage - Storage (suitable container), Identification of the substance / mixture and of the company / undertaking - Synonyms, Transport information - Transport

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

POOL POWER MULTI ACTION TABLETS

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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