

# CHLORIDE TEST TABLETS

## Wilhelmsen Ships Service AS

Part Number: 739458

Version No: 7.11

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

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L.REACH.NOR.EN

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

#### 1.1. Product Identifier

|                                      |   |
|--------------------------------------|---|
| <b>Product name</b>                  | CHLORIDE TEST TABLETS   |
| <b>Chemical Name</b>                 | Not Applicable  |
| <b>Synonyms</b>                      | ALSO USED IN SPECTRAPAK 309 (739466) ,Product Part Number: 739458 (250 x 0.1 gram)                  |
| <b>Proper shipping name</b>          | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains silver nitrate and potassium chromate) |
| <b>Chemical formula</b>              | Not Applicable  |
| <b>Other means of identification</b> | 739458, 555656, 739466, 739474, 739482, 739490  |

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

|                                  |   |
|----------------------------------|---|
| <b>Chemical Product Category</b> | PC21   Laboratory chemicals   |
| <b>Sectors of Use</b>            | SU3   Industrial uses: Uses of substances as such or in preparations* at industrial sites |
| <b>Relevant identified uses</b>  | Use according to manufacturer's directions.   |
| <b>Uses advised against</b>      | Not Applicable  |

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

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

|                                |   |
|--------------------------------|---|
| <b>Registered company name</b> | Wilhelmsen Ships Service AS* Central Warehouse                    |
| <b>Address</b>                 | Willem Barentszstraat 50 Rotterdam Netherlands                    |
| <b>Telephone</b>               | +31 10 4877 777   |
| <b>Fax</b>                     | Not Available   |
| <b>Website</b>                 | <a href="http://www.wilhelmsen.com">http://www.wilhelmsen.com</a> |

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|              |                              |
|--------------|------------------------------|
| <b>Email</b> | wss.rotterdam@wilhelmsen.com |
|--------------|------------------------------|

**1.4. Emergency telephone number**

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

| Association / Organisation        | Dutch nat. poison centre | CHEMWATCH EMERGENCY RESPONSE |
|-----------------------------------|--------------------------|------------------------------|
| 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**

|  |   |
|--|---|
| <b>Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1]</b> | H350 - Carcinogenicity Category 1B, H400 - Hazardous to the Aquatic Environment Acute Hazard Category 1, H318 - Serious Eye Damage/Eye Irritation Category 1, H340 - Germ Cell Mutagenicity Category 1B, H315 - Skin Corrosion/Irritation Category 2, H360FD - Reproductive Toxicity Category 1B, H317 - Sensitisation (Skin) Category 1, H410 - Hazardous to the Aquatic Environment Long-Term Hazard Category 1 |
| <b>Legend:</b>   | 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI  |

**2.2. Label elements**

|                            |   |
|----------------------------|---|
| <b>Hazard pictogram(s)</b> |  |
|----------------------------|---|

|                    |               |
|--------------------|---------------|
| <b>Signal word</b> | <b>Danger</b> |
|--------------------|---------------|

**Hazard statement(s)**

|               |   |
|---------------|---|
| <b>H350</b>   | May cause cancer.                                     |
| <b>H318</b>   | Causes serious eye damage.                            |
| <b>H340</b>   | May cause genetic defects.                            |
| <b>H315</b>   | Causes skin irritation.                               |
| <b>H360FD</b> | May damage fertility. May damage the unborn child.    |
| <b>H317</b>   | May cause an allergic skin reaction.                  |
| <b>H410</b>   | Very toxic to aquatic life with long lasting effects. |

**Supplementary statement(s)**

Not Applicable

**Precautionary statement(s) General**

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

**Precautionary statement(s) Prevention**

|             |  |
|-------------|--|
| <b>P201</b> | Obtain special instructions before use.  |
| <b>P280</b> | Wear protective gloves, protective clothing, eye protection and face protection. |
| <b>P261</b> | Avoid breathing dust/fumes.  |

|      |  |
|------|--|
| P273 | Avoid release to the environment.                                      |
| P264 | Wash all exposed external body areas thoroughly after handling.        |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |

**Precautionary statement(s) Response**

|                |  |
|----------------|--|
| 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.   |
| P302+P352      | IF ON SKIN: Wash with plenty of water.   |
| P333+P313      | If skin irritation or rash occurs: Get medical advice/attention.   |
| P362+P364      | Take off contaminated clothing and wash it before reuse.   |
| P391           | Collect spillage.  |

**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**

|                      |  |
|----------------------|--|
| 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)                            |
| potassium dichromate | Listed in the European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern for Authorisation |
| potassium dichromate | Listed in the Europe Regulation (EC) No 1907/2006 - Annex XIV List of Substances Subject to Authorisation          |
| potassium dichromate | Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)                            |
| potassium chromate   | Listed in the European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern for Authorisation |
| potassium chromate   | Listed in the Europe Regulation (EC) No 1907/2006 - Annex XIV List of Substances Subject to Authorisation          |
| potassium chromate   | 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<br>2.EC No<br>3.Index No<br>4.REACH No                            | %[weight] | Name                        | Classification according to regulation (EC) No 1272/2008 [CLP] and amendments  | SCL / M-Factor           | Nanoform Particle Characteristics |
|--|-----------|-----------------------------|--|--------------------------|-----------------------------------|
| 1.7761-88-8<br>2.231-853-9<br>3.047-001-00-2<br>4.Not Available            | 2.5-5     | <u>silver nitrate</u> *     | Oxidizing Solids Category 2, Skin Corrosion/Irritation Category 1B, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H272, H314, H400, H410 [2]   | Not Available            | Not Available                     |
| 1.10043-35-3<br>2.233-139-2 234-343-4<br>3.005-007-00-2<br>4.Not Available | 50-60     | <u>boric acid</u>           | Reproductive Toxicity Category 1B; H360FD [2]  | Not Available            | Not Available                     |
| 1.7778-50-9<br>2.231-906-6<br>3.024-002-00-6<br>4.Not Available            | 0.1-1     | <u>potassium dichromate</u> | Oxidizing Solids Category 2, Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 2, Skin Corrosion/Irritation Category 1B, Sensitisation (Skin) Category 1, Sensitisation (Respiratory) Category 1, Germ Cell Mutagenicity Category 1B, Carcinogenicity Category 1B, Reproductive Toxicity Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H272, H301, H312, H330, H314, H317, H334, H340, H350, H360FD, H372, H400, H410 | STOT SE 3; H335: C ≥ 5 % | Not Available                     |

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| 1.CAS No<br>2.EC No<br>3.Index No<br>4.REACH No                 | %[weight] | Name  | Classification according to regulation (EC) No 1272/2008 [CLP] and amendments   | SCL / M-Factor                   | Nanoform Particle Characteristics |
|---|-----------|---|---|----------------------------------|-----------------------------------|
| 1.7789-00-6<br>2.232-140-5<br>3.024-006-00-8<br>4.Not Available | 2.5-5     | <u>potassium chromate</u>   | [2]<br>Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1, Germ Cell Mutagenicity Category 1B, Carcinogenicity Category 1B, 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; H315, H319, H317, H340, H350i, H335, H400, H410 [2] | Skin Sens. 1; H317: C<br>≥ 0,5 % | Not Available                     |
| <b>Legend:</b>  |           | 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties |   |                                  |                                   |

## SECTION 4 First aid measures

## 4.1. Description of first aid measures

|                     |   |
|---------------------|---|
| <b>Eye Contact</b>  | <ul style="list-style-type: none"> <li>Generally not applicable.</li> </ul>   |
| <b>Skin Contact</b> | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>Quickly but gently, wipe material off skin with a dry, clean cloth.</li> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>Transport to hospital, or doctor.</li> <li>Generally not applicable.</li> </ul>   |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>Transport to hospital, or doctor, without delay.</li> <li>Generally not applicable.</li> </ul>   |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li><b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li> <li>For advice, contact a Poisons Information Centre or a doctor.</li> <li>Urgent hospital treatment is likely to be needed.</li> <li>In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li> <li>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.</li> <li>If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li> </ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"> <li><b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> </ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p> <ul style="list-style-type: none"> <li>Generally not applicable.</li> </ul> |

## 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

#53ag

The material may induce methaemoglobinaemia following exposure.

- Initial attention should be directed at oxygen delivery and assisted ventilation if necessary. Hyperbaric oxygen has not demonstrated substantial benefits.
- Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis, alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 50 minutes; repeat, using the same dose, if symptoms of hypoxia fail to subside within 1 hour.
- Thorough cleansing of the entire contaminated area of the body, including the scalp and nails, is of utmost importance.

BIOLOGICAL EXPOSURE INDEX - BEI

Continued...

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These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

| Determinant                | Index               | Sampling Time          | Comment   |
|----------------------------|---------------------|------------------------|-----------|
| 1. Methaemoglobin in blood | 1.5% of haemoglobin | During or end of shift | B, NS, SQ |

B: Background levels occur in specimens collected from subjects **NOT** exposed

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

For acute or repeated short term exposures to boron and its compounds:

- Nausea, vomiting, diarrhoea and epigastric pain, haematemesis and blue-green discolouration of both faeces and vomitus characterise adult boron intoxication.
- Access and correct any abnormalities found in airway and circulation.
- A tidal volume of 10-15 mg/kg should be maintained.
- Emesis should be induced unless the patient is in coma, is experiencing seizures or has lost the gag reflex. If any of these are present, gastric lavage should be performed with a large-bore tube after endotracheal intubation or in the presence of continuous respiratory action.
- Activated charcoal is probably not of value though its use might be indicated following gastric evacuation. Catharsis might be useful to eliminate any borates remaining in the gastro-intestinal tract (magnesium sulfate: adults, 30 gms: children 250 mg/kg).
- Peritoneal dialysis and haemodialysis remove some borates.

[Ellenhorn and Barceloux: Medical Toxicology]

## SECTION 5 Firefighting measures

### 5.1. Extinguishing media

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

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

|                             |             |
|-----------------------------|-------------|
| <b>Fire Incompatibility</b> | None known. |
|-----------------------------|-------------|

### 5.3. Advice for firefighters

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Wear breathing apparatus plus protective gloves.</li> <li>▸ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▸ Use fire fighting procedures suitable for surrounding area.</li> <li>▸ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▸ Cool fire exposed containers with water spray from a protected location.</li> <li>▸ If safe to do so, remove containers from path of fire.</li> </ul> <p>Slight hazard when exposed to heat, flame and oxidisers.</p>   |
| <b>Fire/Explosion Hazard</b> | <p>Under certain conditions the material may become combustible because of the ease of ignition which occurs after the material reaches a high specific area ratio (thin sections, fine particles, or molten states). However, the same material in massive solid form is comparatively difficult to ignite. Nearly all metals will burn in air under certain conditions. Some are oxidised rapidly in the presence of air or moisture, generating sufficient heat to reach their ignition temperatures.</p> <p>Others oxidise so slowly that heat generated during oxidation is dissipated before the metal becomes hot enough to ignite. Particle size, shape, quantity, and alloy are important factors to be considered when evaluating metal combustibility. Combustibility of metallic alloys may differ and vary widely from the combustibility characteristics of the alloys' constituent elements.</p> <p>Decomposition may produce toxic fumes of:</p> <ul style="list-style-type: none"> <li>metal oxides</li> </ul> <p>May emit poisonous fumes.</p> <p>Articles and manufactured articles may constitute a fire hazard where polymers form their outer layers or where combustible packaging remains in place.</p> <p>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

Continued...

|                     |  |
|---------------------|--|
| <b>Minor Spills</b> | <p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> <li>▸ Clean up all spills immediately.</li> <li>▸ Secure load if safe to do so.</li> <li>▸ Bundle/collect recoverable product.</li> <li>▸ Collect remaining material in containers with covers for disposal.</li> </ul>   |
| <b>Major Spills</b> | <p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> <li>▸ Clear area of personnel and move upwind.</li> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Wear breathing apparatus plus protective gloves.</li> <li>▸ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▸ Stop leak if safe to do so.</li> <li>▸ Contain spill with sand, earth or vermiculite.</li> <li>▸ Collect recoverable product into labelled containers for recycling.</li> </ul> <p>Clear area of personnel and move upwind.</p> <p>Alert Fire Brigade and tell them location and nature of hazard.</p> <p>Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water courses.</p> <p>No smoking, naked lights or ignition sources.</p> <p>Increase ventilation. Stop leak if safe to do so.</p> <ul style="list-style-type: none"> <li>▸ Clean up all spills immediately.</li> <li>▸ Wear protective clothing, safety glasses, dust mask, gloves.</li> <li>▸ Secure load if safe to do so. Bundle/collect recoverable product.</li> <li>▸ Use dry clean up procedures and avoid generating dust.</li> <li>▸ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▸ Water may be used to prevent dusting.</li> </ul> |

#### 6.4. Reference to other sections

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

### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

|                                      |  |
|--------------------------------------|--|
| <b>Safe handling</b>                 | <ul style="list-style-type: none"> <li>▸ Avoid all personal contact, including inhalation.</li> <li>▸ Wear protective clothing when risk of exposure occurs.</li> <li>▸ Use in a well-ventilated area.</li> <li>▸ Prevent concentration in hollows and sumps.</li> <li>▸ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▸ <b>DO NOT allow material to contact humans, exposed food or food utensils.</b></li> <li>▸ Avoid contact with incompatible materials.</li> </ul> |
| <b>Fire and explosion protection</b> | See section 5  |
| <b>Other information</b>             | <ul style="list-style-type: none"> <li>▸ Store in original containers.</li> <li>▸ Keep containers securely sealed.</li> <li>▸ Store in a cool, dry, well-ventilated area.</li> <li>▸ Store away from incompatible materials and foodstuff containers.</li> <li>▸ Protect containers against physical damage and check regularly for leaks.</li> <li>▸ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▸ Store away from incompatible materials.</li> </ul> |

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

|                           |   |
|---------------------------|---|
| <b>Suitable container</b> | <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> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>▸ Drums and jerricans must be of the non-removable head type.</li> <li>▸ Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> </ul> <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> <li>▸ Removable head packaging;</li> <li>▸ Cans with friction closures and</li> <li>▸ low pressure tubes and cartridges</li> </ul> <p>may be used.</p> <p>-</p> <p>Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages *.</p> <p>-</p> <p>In addition, where inner packagings are glass and contain liquids of packing group I and II there must be sufficient inert absorbent to absorb any spillage *.</p> |
|---------------------------|---|

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|  |  |
|--|--|
|  | <p>-</p> <p>* unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.</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>  |
| <b>Storage incompatibility</b>   | <p>Inorganic derivative of Group 11 metal.</p> <p>Derivative of electronegative metal.</p> <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>Unlike most metals, most metalloids are amphoteric- that is they can act as both an acid and a base. For instance, arsenic forms not only salts such as arsenic halides, by the reaction with certain strong acid, but it also forms arsenites by reactions with strong bases.</p> <p>Most metalloids have a multiplicity of oxidation states or valences. For instance, tellurium has the oxidation states +2, -2, +4, and +6.</p> <p>Derivative of electropositive metal.</p> <p>Boric acid:</p> <ul style="list-style-type: none"> <li>▸ is a weak acid</li> <li>▸ is incompatible with alkali carbonates, hydroxides (forming borate salts), strong reducing agents and alkali metals</li> <li>▸ reacts violently with potassium metal</li> <li>▸ forms heat-sensitive explosive compound on contact with acetic anhydride</li> <li>▸ WARNING: Avoid or control reaction with peroxides. All <i>transition metal</i> peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively.</li> <li>▸ The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono- or poly-fluorobenzene show extreme sensitivity to heat and are explosive.</li> <li>▸ Avoid reaction with borohydrides or cyanoborohydrides</li> </ul> <ul style="list-style-type: none"> <li>· Silver or silver salts readily form explosive silver fulminate in the presence of both nitric acid and ethanol. The resulting fulminate is much more sensitive and a more powerful detonator than mercuric fulminate.</li> <li>· Silver and its compounds and salts may also form explosive compounds in the presence of acetylene and nitromethane.</li> <li>· Silver is incompatible with oxalic or tartaric acids, since the silver salts decompose on heating. Silver oxalate explodes at 140 deg C, and silver tartrate loses carbon dioxide</li> </ul> <p>Silver solutions used in photography can become explosive under a variety of conditions. Ammoniacal silver nitrate solutions, on storage, heating or evaporation eventually deposit silver nitride (fulminating silver). Silver nitrate and ethanol may give silver fulminate, and in contact with azides or hydrazine, silver azide.</p> <ul style="list-style-type: none"> <li>▸ Segregate from alcohol, water.</li> <li>▸ Avoid strong bases.</li> </ul> |
| <b>Hazard categories in accordance with Regulation (EC) No 1272/2008</b>   | E1: Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1  |
| <b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b> | E1 Lower- / Upper-tier requirements: 100 / 200   |



X — Must not be stored together

0 — May be stored together with specific preventions

+ — May be stored together

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

### 7.3. Specific end use(s)

See section 1.2

## SECTION 8 Exposure controls / personal protection

### 8.1. Control parameters

| Ingredient | DNELs | PNECs |
|------------|-------|-------|
|------------|-------|-------|

Continued...

## CHLORIDE TEST TABLETS

|                      | Exposure Pattern Worker  | Compartment   |
|----------------------|--|---|
| silver nitrate       | Inhalation 0.016 mg/m <sup>3</sup> (Systemic, Chronic)<br><i>Inhalation 0.006 mg/m<sup>3</sup> (Systemic, Chronic) *</i><br><i>Oral 0.02 mg/kg bw/day (Systemic, Chronic) *</i>  | 0.04 µg/L (Water (Fresh))<br>0.86 µg/L (Water - Intermittent release)<br>438.13 mg/kg sediment dw (Sediment (Fresh Water))<br>438.13 mg/kg sediment dw (Sediment (Marine))<br>1.41 mg/kg soil dw (Soil)<br>0.025 mg/L (STP)   |
| boric acid           | Dermal 1.556 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 0.544 mg/m <sup>3</sup> (Systemic, Chronic)<br>Inhalation 13.6 mg/m <sup>3</sup> (Local, Chronic)<br>Inhalation 13.6 mg/m <sup>3</sup> (Local, Acute)<br><i>Dermal 0.555 mg/kg bw/day (Systemic, Chronic) *</i><br><i>Inhalation 0.083 mg/m<sup>3</sup> (Systemic, Chronic) *</i><br><i>Oral 0.056 mg/kg bw/day (Systemic, Chronic) *</i><br><i>Inhalation 13.6 mg/m<sup>3</sup> (Local, Chronic) *</i><br><i>Oral 0.92 mg/kg bw/day (Systemic, Acute) *</i><br><i>Inhalation 13.6 mg/m<sup>3</sup> (Local, Acute) *</i> | 2.9 mg/L (Water (Fresh))<br>2.9 mg/L (Water - Intermittent release)<br>13.7 mg/L (Water (Marine))<br>5.7 mg/kg soil dw (Soil)<br>10 mg/L (STP)  |
| potassium dichromate | Not Available  | 0 mg/L (Water (Fresh))<br>0 mg/L (Water (Marine))<br>0.15 mg/kg sediment dw (Sediment (Fresh Water))<br>0.15 mg/kg sediment dw (Sediment (Marine))<br>0.035 mg/kg soil dw (Soil)<br>0.21 mg/L (STP)<br>17000 g/kg food (Oral) |
| potassium chromate   | Not Available  | 0 mg/L (Water (Fresh))<br>0.15 mg/kg sediment dw (Sediment (Fresh Water))<br>0.035 mg/kg soil dw (Soil)<br>0.21 mg/L (STP)<br>17000 g/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)   | silver nitrate       | Silver (soluble compounds as Ag)  | 0.01 mg/m <sup>3</sup>  | Not Available | Not Available | Not Available |
| Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian)  | silver nitrate       | Sølv, løselige forb. (beregnet som Ag)  | 0.01 mg/m <sup>3</sup>  | Not Available | Not Available | E             |
| European Union Directive (EU) 2017/2398 amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work | potassium dichromate | Not Available   | 0,005 mg/m <sup>3</sup> | Not Available | Not Available | Not Available |
| Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian)  | potassium dichromate | Sekssverdige kromforbindelser (beregnet som Cr(VI)) For blykromat, se egen oppføring. | 0.001 mg/m <sup>3</sup> | Not Available | Not Available | AKG           |
| European Union Directive (EU) 2017/2398 amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work | potassium chromate   | Not Available   | 0,005 mg/m <sup>3</sup> | Not Available | Not Available | Not Available |

Continued...



## CHLORIDE TEST TABLETS

| Source  | Ingredient         | Material name  | TWA         | STEL          | Peak          | Notes |
|---|--------------------|--|-------------|---------------|---------------|-------|
| Norway regulations on action values and limit values physical and chemical factors in the work environment and infection risk groups for biological factors (Norwegian) | potassium chromate | Seksverdige kromforbindelser (beregnet som Cr(VI)) For blykromat, se egen oppføring. | 0.001 mg/m3 | Not Available | Not Available | AKG   |

## Emergency Limits

| Ingredient           | TEEL-1      | TEEL-2    | TEEL-3    |
|----------------------|-------------|-----------|-----------|
| silver nitrate       | 0.047 mg/m3 | 0.9 mg/m3 | 5.4 mg/m3 |
| boric acid           | 6 mg/m3     | 23 mg/m3  | 830 mg/m3 |
| potassium dichromate | 0.42 mg/m3  | 7.4 mg/m3 | 44 mg/m3  |
| potassium chromate   | 0.56 mg/m3  | 9.7 mg/m3 | 58 mg/m3  |

| Ingredient           | Original IDLH | Revised IDLH  |
|----------------------|---------------|---------------|
| silver nitrate       | 10 mg/m3      | Not Available |
| boric acid           | Not Available | Not Available |
| potassium dichromate | Not Available | Not Available |
| potassium chromate   | Not Available | Not Available |

## Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit  |
|------------|-----------------------------------|-----------------------------------|
| boric acid | D                                 | > 0.01 to ≤ 0.1 mg/m <sup>3</sup> |

## 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.

## MATERIAL DATA

For inorganic borates and tetraborates:

No data are currently available to establish a causal link between inhalation exposures to sodium tetraborates and chronic respiratory and/or systemic effects. An occupationally important toxic effect of the sodium tetraborates is their acute irritant effect when in contact with skin and the mucous membranes of the eyes, nose and other sites of the respiratory tract. The irritant properties increase with decreasing water of hydration due to the exothermic effect of hydration. The TLV-TWA of 1 mg/m3 for the anhydrous and pentahydrate forms and 5 mg/m3 for the decahydrate is thought to be protective against the acute irritant effects.

for chrome(VI) containing substances:

Some jurisdictions require that health surveillance be carried on workers occupationally exposed to inorganic chromium. Such surveillance should emphasise

- demography, occupational and medical history and health advice
- physical examination with emphasis on the respiratory system and skin
- weekly skin inspection of hands and forearms by a "responsible person"

An induction threshold for chromium (VI) allergy is difficult to define, but from experience in the construction industry and among cement workers it is well known that levels of 10-20 mg/kg soluble chromium (VI) in the cement has caused sensitisation with a prevalence of about 4-5% of the exposed population.

Minimum elicitation thresholds (MET10%) which will elicit an allergic response in 10% of already sensitised individuals are found to be in the range of 0.02 to 0.9 ug/cm<sup>2</sup>/ 2 days in different studies (Annex XV Report - Proposal for a restriction: Chromium (VI) compounds - Jan 2012)

<http://echa.europa.eu/documents/10162/4d88d444-4b8b-48ab-9c11-6e74819e047c>

**WARNING:** This substance is classified by the NOHSC as Category 2 Probable Human Carcinogen

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)

The adopted TLV-TWA for silver dust and fumes is 0.1 mg/m3 and for the more toxic soluble silver compounds the adopted value is 0.01 mg/m3. Cases of argyria (a slate to blue-grey discolouration of epithelial tissues) have been recorded when workers were exposed to silver nitrate at concentrations of 0.1 mg/m3 (as silver). Exposure to very high concentrations of silver fume has caused diffuse pulmonary fibrosis. Percutaneous absorption of silver compounds is reported to have resulted in allergy. Based on a 25% retention upon inhalation and a 10 m3/day respiratory volume, exposure to 0.1 mg/m3 (TWA) would result in total deposition of no more than 1.5 gms in 25 years.

## 8.2. Exposure controls

Continued...

|   |  |
|---|--|
| <p><b>8.2.1. Appropriate engineering controls</b></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>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p> <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><b>8.2.2. Personal protection</b></p>              |   |
| <p><b>Eye and face protection</b></p>                 | <p>No special equipment required due to the physical form of the product.</p> <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable.</li> </ul>   |
| <p><b>Skin protection</b></p>                         | <p>See Hand protection below</p>   |
| <p><b>Hands/feet protection</b></p>                   | <p>Wear general protective gloves, eg. light weight rubber gloves.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ 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.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul>   |
| <p><b>Body protection</b></p>                         | <p>See Other protection below</p>  |
| <p><b>Other protection</b></p>                        | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ Eyewash unit.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> </ul> <p>No special equipment required due to the physical form of the product.</p>  |

## 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:

CHLORIDE TEST 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.

## Respiratory protection

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

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

## 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|   |   |  |                |
|---|---|--|----------------|
| <b>Appearance</b>                                   | Light sensitive.<br>Tablets, beige, partly soluble in water |  |                |
| <b>Physical state</b>                               | Manufactured  | <b>Relative density (Water = 1)</b>            | 1.838          |
| <b>Odour</b>  | Not Available   | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available   | <b>Auto-ignition temperature (°C)</b>          | Not Available  |
| <b>pH (as supplied)</b>                             | Not Available   | <b>Decomposition temperature (°C)</b>          | Not Available  |
| <b>Melting point / freezing point (°C)</b>          | Not Available   | <b>Viscosity (cSt)</b>                         | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b> | Not Applicable  | <b>Molecular weight (g/mol)</b>                | Not Available  |
| <b>Flash point (°C)</b>                             | Not Available   | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Available BuAC = 1                                      | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Not Available   | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Available   | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Applicable |
| <b>Lower Explosive Limit (%)</b>                    | Not Available   | <b>Volatile Component (%vol)</b>               | Not Available  |
| <b>Vapour pressure (kPa)</b>                        | Not Available   | <b>Gas group</b>                               | Not Available  |
| <b>Solubility in water</b>                          | Partly miscible   | <b>pH as a solution (1%)</b>                   | 7.1            |
| <b>Vapour density (Air = 1)</b>                     | Not Available   | <b>VOC g/L</b>                                 | Not Available  |
| <b>Nanoform Solubility</b>                          | Not Available   | <b>Nanoform Particle Characteristics</b>       | Not Available  |
| <b>Particle Size</b>                                | Not Available   |  |                |

### 9.2. Other information

Not Available

## SECTION 10 Stability and reactivity

|   |  |
|---|--|
| <b>10.1.Reactivity</b>                          | See section 7  |
| <b>10.2. Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| <b>10.3. Possibility of hazardous reactions</b> | See section 7  |
| <b>10.4. Conditions to avoid</b>                | See section 7  |
| <b>10.5. Incompatible materials</b>             | See section 7  |
| <b>10.6. Hazardous decomposition products</b>   | See section 5  |

## SECTION 11 Toxicological information

### 11.1. Information on toxicological effects

|                |  |
|----------------|--|
| <b>Inhaled</b> | <p>The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (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 and that suitable control measures be used in an occupational setting.</p> <p>Inhalation may result in chrome ulcers or sores of nasal mucosa and lung damage.</p> <p>Borates, as represented by borax, may act as simple respiratory irritants. In a study of the respiratory effects of borax dust on active borax workers, the incidence of respiratory symptoms, pulmonary function and abnormalities of chest radiographs were related to estimated exposures. Dryness of the mouth, nose or throat, dry cough, nose bleeds, sore throat, productive cough,</p> |
|----------------|--|

Continued...

|                     |  |
|---------------------|--|
|                     | <p>shortness of breath and chest tightness were related to exposures of 4 mg/m<sup>3</sup> or more</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</p> <p>Inhalation of small amounts of dust or fume over long periods may cause poisoning.</p>   |
| <b>Ingestion</b>    | <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> <p>The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia).</p> <p>Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure.</p> <p>At about 15% concentration of blood methaemoglobin there is observable cyanosis of the lips, nose and earlobes. Symptoms may be absent although euphoria, flushed face and headache are commonly experienced. At 25-40%, cyanosis is marked but little disability occurs other than that produced on physical exertion.</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. Vomiting (which may be violent) is often persistent and vomitus and faeces may contain blood. Weakness, lethargy, headache, restlessness, tremors and intermittent convulsions may also occur. Poisoning produces central nervous system stimulation followed by depression, gastrointestinal disturbance (haemorrhagic gastro-enteritis), erythematous skin eruptions (giving rise to a boiled lobster appearance) and may also involve kidneys (producing oliguria, albuminuria, anuria) and, rarely, liver (hepatomegaly, jaundice). Toxic symptoms may be delayed for several hours.</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> |
| <b>Skin Contact</b> | <p>Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant 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> <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. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p> <p>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.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Skin contact may result in severe irritation particularly to broken skin. Ulceration known as "chrome ulcers" may develop. Chrome ulcers and skin cancer are significantly related.</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>Irritation and skin reactions are possible with sensitive skin</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>  |
| <b>Eye</b>          | <p>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>  |
| <b>Chronic</b>      | <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. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance who are likely to become hyper-responsive.</p> <p>Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing air-way hyper-responsiveness. The latter substances are not classified as asthmagens or respiratory sensitisers</p> <p>Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented.</p> <p>There is sufficient evidence to provide a strong presumption that human exposure to the material may result in the development of heritable genetic damage, generally on the basis of</p> <ul style="list-style-type: none"> <li>- appropriate animal studies,</li> <li>- other relevant information</li> </ul> <p>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.</p> <p>Silver is one of the most physically and physiologically cumulative of the elements. Chronic exposure to silver salts may cause argyria, a permanent ashen-grey discolouration of the skin, conjunctiva and internal organs (due to the deposit of an insoluble</p>  |

albuminate of silver).

The respiratory tract may also be a site of local argyria (following chronic inhalation exposures) with a mild chronic bronchitis being the only obvious symptom.

Sub-chronic exposure to a substance containing silver results in elevated alkaline phosphatase levels along with pigmentation of the tissues and organs. These effects are commonly observed in studies on silver.

Organ and tissue pigmentation appears to be an intrinsic property of silver ions, constituting an early marker of silver toxicity. This effect is therefore taken into consideration for the derivation of toxicological reference values.

Chromium(III) is considered an essential trace nutrient serving as a component of the "glucose tolerance factor" and a cofactor for insulin action. High concentrations of chromium are also found in RNA. Trivalent chromium is the most common form found in nature.

Chronic inhalation of trivalent chromium compounds produces irritation of the bronchus and lungs, dystrophic changes to the liver and kidney, pulmonary oedema, and adverse effects on macrophages. Intratracheal administration of chromium(III) oxide, in rats, increased the incidence of sarcomas, and tumors and reticulum cell sarcomas of the lung. There is inadequate evidence of carcinogenicity of chromium(III) compounds in experimental animals and humans (IARC).

Chronic exposure to hexavalent chromium compounds reportedly produces skin, eye and respiratory tract irritation, yellowing of the eyes and skin, allergic skin and respiratory reactions, diminished sense of smell and taste, blood disorders, liver and kidney damage, digestive disorders and lung damage.

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. Although it does not appear to be carcinogenic, studies in dogs have reported testicular atrophy after exposure to 32 mg/kg bw/day for 90 days. This level is far lower than the LD50.

Boric acid in high doses shows significant developmental toxicity and teratogenicity in rabbit, rat, and mouse fetuses as well as cardiovascular defects, skeletal variations, mild kidney lesions.

The mechanism of action by which boric acid causes testicular toxicity has been investigated and it has been proposed that decreased testosterone production arises via a CNS mediated mechanism.

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. Hair loss in a young woman was traced to chronic ingestion of boric acid-containing mouthwashes whilst hair loss, dermatitis, gastric ulcer and hypoplastic anaemia in an adult male was attributed to the consumption of an uncharacterised "boric tartrate" for 20 years (symptoms disappeared following withdrawal). Repeated ingestion or inhalation of sub-acute doses of boric acid produces gastrointestinal irritation and disturbance, loss of appetite, disturbed digestion, nausea and vomiting, erythematous rash which may become hard and purpuric, dryness of the skin and mucous membranes, reddening of the tongue, cracking of the lips, conjunctivitis, palpebral oedema and kidney injury. Workers exposed to dust levels containing in excess of 31 mg/m<sup>3</sup> boric acid, showed atrophic and subatrophic changes of the respiratory mucous membranes. Prolonged ingestion by animals produces a variety of reproductive effects including changes to the ovaries, fallopian tubes, the testes, epididymis and sperm ducts.

| CHLORIDE TEST TABLETS | TOXICITY  | IRRITATION   |
|-----------------------|---|--|
|                       | Not Available   | Not Available  |
| silver nitrate        | TOXICITY  | IRRITATION   |
|                       | dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup><br>Oral (Rat) LD50: 50 mg/kg <sup>[2]</sup>   | Eye (rabbit): 1 mg - SEVERE<br>Eye (rabbit): 10 mg - moderate                                      |
| boric acid            | TOXICITY  | IRRITATION   |
|                       | Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup><br>Inhalation(Rat) LC50: >2.12 mg/l4h <sup>[1]</sup>   | Eye: no adverse effect observed (not irritating) <sup>[1]</sup><br>Skin (human): 15 mg/3d -I- mild |
|                       | Oral (Rat) LD50: >2600 mg/kg <sup>[1]</sup>   | Skin: no adverse effect observed (not irritating) <sup>[1]</sup>                                   |
| potassium dichromate  | TOXICITY  | IRRITATION   |
|                       | Dermal (rabbit) LD50: 14 mg/kg <sup>[2]</sup><br>Inhalation(Rat) LC50: 0.083 mg/L4h <sup>[1]</sup>  | Highly irritating & corrosive  |
|                       | Oral (Rat) LD50: 52 mg/kg <sup>[1]</sup>  |  |
| potassium chromate    | TOXICITY  | IRRITATION   |
|                       | Dermal (rabbit) LD50: 960 mg/kg <sup>[1]</sup><br>Inhalation(Rat) LC50: 0.083 mg/L4h <sup>[1]</sup>   | Skin (human): Highly irritating &  |
|                       | Oral (Rat) LD50: 52 mg/kg <sup>[1]</sup>  |  |
| <b>Legend:</b>        | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances |  |

|   |   |
|---|---|
| <b>SILVER NITRATE</b>   | Reproductive effector in rats Human lymphocyte mutagen Equivocal tumorigen by RTECS criteria<br><br>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.  |
| <b>BORIC ACID</b>   | 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.  |
| <b>POTASSIUM DICHROMATE</b>   | Allergic reactions which develop in the respiratory passages as bronchial asthma or rhinoconjunctivitis, are mostly the result of reactions of the allergen with specific antibodies of the IgE class and belong in their reaction rates to the manifestation of the immediate type. In addition to the allergen-specific potential for causing respiratory sensitisation, the amount of the allergen, the exposure period and the genetically determined disposition of the exposed person are likely to be decisive. Factors which increase the sensitivity of the mucosa may play a role in predisposing a person to allergy. They may be genetically determined or acquired, for example, during infections or exposure to irritant substances. Immunologically the low molecular weight substances become complete allergens in the organism either by binding to peptides or proteins (haptens) or after metabolism (prohaptens). Particular attention is drawn to so-called atopic diathesis which is characterised by an increased susceptibility to allergic rhinitis, allergic bronchial asthma and atopic eczema (neurodermatitis) which is associated with increased IgE synthesis. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.<br><br><b>WARNING:</b> This substance has been classified by the IARC as Group 1: <b>CARCINOGENIC TO HUMANS.</b> |
| <b>POTASSIUM CHROMATE</b>   | Oral (rat) LD50: 50-500 mg/kg corrosive [CCINFO-Baker]  |
| <b>CHLORIDE TEST TABLETS &amp; SILVER NITRATE &amp; POTASSIUM DICHROMATE &amp; POTASSIUM CHROMATE</b> | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.   |
| <b>CHLORIDE TEST TABLETS &amp; POTASSIUM DICHROMATE &amp; POTASSIUM CHROMATE</b>                      | The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.  |

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

**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 Disruption Properties

Not Available

### 11.2.2. Other Information

See Section 11.1

## SECTION 12 Ecological information

### 12.1. Toxicity

|                              | Endpoint | Test Duration (hr) | Species | Value | Source |
|------------------------------|----------|--------------------|---------|-------|--------|
| <b>CHLORIDE TEST TABLETS</b> |          |                    |         |       |        |

Continued...

## CHLORIDE TEST TABLETS

|                             | Not Available  | Not Available             | Not Available                 | Not Available   | Not Available |
|-----------------------------|--|---------------------------|-------------------------------|-----------------|---------------|
| <b>silver nitrate</b>       | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                | <b>Value</b>    | <b>Source</b> |
|                             | BCF  | 792h                      | Fish                          | <54-310         | 7             |
|                             | NOEC(ECx)  | 12960h                    | Fish                          | <0.001mg/l      | 1             |
|                             | EC50   | 72h                       | Algae or other aquatic plants | 0.153mg/L       | 4             |
|                             | EC50   | 48h                       | Crustacea                     | <0.001mg/L      | 4             |
|                             | LC50   | 96h                       | Fish                          | 0.003mg/l       | 1             |
|                             | EC50   | 96h                       | Algae or other aquatic plants | 0.011mg/L       | 4             |
| <b>boric acid</b>           | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                | <b>Value</b>    | <b>Source</b> |
|                             | EC50   | 72h                       | Algae or other aquatic plants | 40.2mg/l        | 2             |
|                             | EC50   | 48h                       | Crustacea                     | 230mg/L         | 5             |
|                             | BCF  | 672h                      | Fish                          | <3.2            | 7             |
|                             | NOEC(ECx)  | 576h                      | Fish                          | 0.001mg/L       | 5             |
|                             | LC50   | 96h                       | Fish                          | 70-80mg/l       | 4             |
|                             | EC50   | 96h                       | Algae or other aquatic plants | 15.4mg/l        | 2             |
| <b>potassium dichromate</b> | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                | <b>Value</b>    | <b>Source</b> |
|                             | EC10(ECx)  | 24h                       | Crustacea                     | 0.005-0.077mg/L | 4             |
|                             | EC50   | 72h                       | Algae or other aquatic plants | 0.14-1.6mg/l    | 4             |
|                             | EC50   | 48h                       | Crustacea                     | 0.01-0.45mg/l   | 4             |
|                             | LC50   | 96h                       | Fish                          | 14.25-36.79mg/l | 4             |
|                             | EC50   | 96h                       | Algae or other aquatic plants | 0.091-0.246mg/l | 4             |
| <b>potassium chromate</b>   | <b>Endpoint</b>  | <b>Test Duration (hr)</b> | <b>Species</b>                | <b>Value</b>    | <b>Source</b> |
|                             | NOEC(ECx)  | 336h                      | Algae or other aquatic plants | <0.002mg/L      | 4             |
|                             | EC50   | 48h                       | Crustacea                     | 7.16-11.3mg/l   | 4             |
|                             | LC50   | 96h                       | Fish                          | 16.16mg/l       | 4             |
|                             | EC50   | 96h                       | Algae or other aquatic plants | 0.332mg/l       | 4             |
| <b>Legend:</b>              | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data |                           |                               |                 |               |

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 Metal:

Atmospheric Fate - Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air.

Environmental Fate: Environmental processes, such as oxidation, the presence of acids or bases and microbiological processes, may transform insoluble metals to more soluble ionic forms. Environmental processes may enhance bioavailability and may also be important in changing solubilities.

Aquatic/Terrestrial Fate: When released to dry soil, most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melt ice. A metal ion is considered infinitely persistent because it cannot degrade further. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. A significant proportion of dissolved/ sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms.

For silver and its compounds:

**Environmental fate:**

Silver is a rare but naturally occurring metal, often found deposited as a mineral ore in association with other elements. Emissions from smelting operations, manufacture and disposal of certain photographic and electrical supplies, coal combustion, and cloud seeding are some of the anthropogenic sources of silver in the biosphere. The global biogeochemical movements of silver are characterized by releases to the atmosphere, water, and land by natural and anthropogenic sources, long-range transport of fine particles in the atmosphere, wet and dry deposition, and sorption to soils and sediments.

In general, accumulation of silver by terrestrial plants from soils is low, even if the soil is amended with silver-containing sewage sludge or the plants are grown on tailings from silver mines, where silver accumulates mainly in the root systems.

The ability to accumulate dissolved silver varies widely between species. Some reported bioconcentration factors for marine organisms (calculated as milligrams of silver per kilogram fresh weight organism divided by milligrams of silver per litre of medium) are 210 in diatoms, 240 in brown algae, 330 in mussels, 2300 in scallops, and 18 700 in oysters, whereas bioconcentration factors for freshwater organisms have been reported to range from negligible in bluegills (*Lepomis macrochirus*) to 60 in daphnids; these values represent uptake of bioavailable silver in laboratory experiments. Laboratory studies with the less toxic silver compounds, such as silver sulfide and silver chloride, reveal that accumulation of silver does not necessarily lead to adverse effects.

Continued...

Chromium in the oxidation state +3 (the trivalent form) is poorly absorbed by cells found in microorganisms, plants and animals. Chromate anions (CrO<sub>4</sub><sup>-</sup>, oxidation state +6, the hexavalent form) are readily transported into cells and toxicity is closely linked to the higher oxidation state.

Chromium Ecotoxicology:

Toxicity in Aquatic Organisms:

Chromium is harmful to aquatic organisms in very low concentrations. Fish food organisms are very sensitive to low levels of chromium. Chromium is toxic to fish although less so in warm water. Marked decreases in toxicity are found with increasing pH or water hardness; changes in salinity have little if any effect. Chromium appears to make fish more susceptible to infection.

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. The half-life of airborne particles is usually on the order of days, depending on the size of the particle and atmospheric conditions.

Boron readily hydrolyses in water to form the electrically neutral, weak monobasic acid boric acid (H<sub>3</sub>BO<sub>3</sub>) and the monovalent ion, B(OH)<sub>4</sub><sup>-</sup>. In concentrated solutions, boron may polymerise, leading to the formation of complex and diverse molecular arrangements. Because most environmentally relevant boron minerals are highly soluble in water, it is unlikely that mineral equilibria will control the fate of boron in water.

Since chromium compounds cannot volatilize from water, transport of chromium from water to the atmosphere is not likely, except by transport in windblown sea sprays. Most of the chromium released into water will ultimately be deposited in the sediment. A very small percentage of chromium can be present in water in both soluble and insoluble forms. Soluble chromium generally accounts for a very small percentage of the total chromium. Most of the soluble chromium is present as chromium(VI) and soluble chromium(III) complexes. In the aquatic phase, chromium(III) occurs mostly as suspended solids adsorbed onto clayish materials, organics, or iron oxide (Fe<sub>2</sub>O<sub>3</sub>) present in water. Soluble forms and suspended chromium can undergo intramedia transport.

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

## 12.2. Persistence and degradability

| Ingredient           | Persistence: Water/Soil | Persistence: Air |
|----------------------|-------------------------|------------------|
| silver nitrate       | LOW                     | LOW              |
| boric acid           | LOW                     | LOW              |
| potassium dichromate | HIGH                    | HIGH             |

## 12.3. Bioaccumulative potential

| Ingredient           | Bioaccumulation       |
|----------------------|-----------------------|
| silver nitrate       | MEDIUM (BCF = 600)    |
| boric acid           | LOW (BCF = 0)         |
| potassium dichromate | LOW (LogKOW = 2.6724) |

## 12.4. Mobility in soil

| Ingredient           | Mobility          |
|----------------------|-------------------|
| silver nitrate       | LOW (KOC = 14.3)  |
| boric acid           | LOW (KOC = 35.04) |
| potassium dichromate | LOW (KOC = 393.3) |

## 12.5. Results of PBT and vPvB assessment

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

## 12.6. Endocrine Disruption Properties

Not Available

## 12.7. Other adverse effects





Not Available

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

|                                     |   |
|-------------------------------------|---|
| <b>Product / Packaging disposal</b> | <ul style="list-style-type: none"> <li>▸ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▸ Consult State Land Waste Management Authority for disposal.</li> <li>▸ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▸ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▸ Where in doubt contact the responsible authority.</li> </ul> |
| <b>Waste treatment options</b>      | Not Available   |
| <b>Sewage disposal options</b>      | Not Available   |

**SECTION 14 Transport information****Labels Required**

|                         |  |
|-------------------------|--|
|                         |   |
| <b>Marine Pollutant</b> |  |

**Land transport (ADR-RID)**

|                                    |   |                 |
|------------------------------------|---|-----------------|
| 14.1. UN number                    | 3077  |                 |
| 14.2. UN proper shipping name      | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains silver nitrate and potassium chromate) |                 |
| 14.3. Transport hazard class(es)   | Class   | 9               |
|                                    | Subrisk   | 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   | 3 (-)           |

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

|                                  |   |                |
|----------------------------------|---|----------------|
| 14.1. UN number                  | 3077  |                |
| 14.2. UN proper shipping name    | Environmentally hazardous substance, solid, n.o.s. (contains silver nitrate and potassium chromate) |                |
| 14.3. Transport hazard class(es) | ICAO/IATA Class   | 9              |
|                                  | ICAO / IATA Subrisk   | Not Applicable |
|                                  | ERG Code  | 9L             |
| 14.4. Packing group              | III   |                |
| 14.5. Environmental hazard       | Environmentally hazardous   |                |

## CHLORIDE TEST TABLETS

|                                    |   |                         |
|------------------------------------|---|-------------------------|
| 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 silver nitrate and potassium chromate) |                     |
| 14.3. Transport hazard class(es)   | IMDG Class  | 9                   |
|                                    | IMDG Subrisk  | 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 silver nitrate and potassium chromate) |                    |
| 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. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

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

| Product name         | Group         |
|----------------------|---------------|
| silver nitrate       | Not Available |
| boric acid           | Not Available |
| potassium dichromate | Not Available |
| potassium chromate   | Not Available |

## 14.9. Transport in bulk in accordance with the ICG Code

| Product name         | Ship Type     |
|----------------------|---------------|
| silver nitrate       | Not Available |
| boric acid           | Not Available |
| potassium dichromate | Not Available |

Continued...

| Product name       | Ship Type     |
|--------------------|---------------|
| potassium chromate | Not Available |

## SECTION 15 Regulatory information

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

#### silver nitrate is found on the following regulatory lists

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

Europe EC Inventory

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

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

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans

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

#### 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 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 6) Reproductive toxicants: Category 1 B

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

#### potassium dichromate is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

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 - Annex XVII (Appendix 12) Restricted substances and maximum concentration limits by weight in homogeneous materials

EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 2) Carcinogens: Category 1 B

EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 4) Germ cell mutagens: Category 1 B

EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 6) Reproductive toxicants: Category 1 B

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

Europe Regulation (EC) No 1907/2006 - Annex XIV List of Substances Subject to 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

European Union Directive (EU) 2017/2398 amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans

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

#### potassium chromate is found on the following regulatory lists

## CHLORIDE TEST TABLETS

## Chemical Footprint Project - Chemicals of High Concern List

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 - Annex XVII (Appendix 12) Restricted substances and maximum concentration limits by weight in homogeneous materials

EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 2) Carcinogens: Category 1 B

EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 4) Germ cell mutagens: Category 1 B

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

Europe Regulation (EC) No 1907/2006 - Annex XIV List of Substances Subject to 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

European Union Directive (EU) 2017/2398 amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans

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

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

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

| Seveso Category | E1 |
|-----------------|----|
|                 |    |

## 15.2. Chemical safety assessment

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

## ECHA SUMMARY

| Ingredient     | CAS number | Index No     | ECHA Dossier  |
|----------------|------------|--------------|---------------|
| silver nitrate | 7761-88-8  | 047-001-00-2 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)  | Pictograms Signal Word Code(s)  | Hazard Statement Code(s)                 |
|-------------------------------|--|---------------------------------|--|
| 1                             | Ox. Sol. 2; Skin Corr. 1B; Aquatic Acute 1; Aquatic Chronic 1  | GHS03; GHS09; GHS05; Dgr        | H272; H314; H410                         |
| 2                             | Ox. Sol. 1; Met. Corr. 1; Skin Corr. 1A; Aquatic Acute 1; Aquatic Chronic 1; Eye Dam. 1; Acute Tox. 4; Repr. 2 | GHS03; GHS09; GHS05; Dgr; GHS08 | H271; H290; H314; H400; H410; H318; H302 |

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

| Ingredient | CAS number | Index No     | ECHA Dossier  |
|------------|------------|--------------|---------------|
| boric acid | 10043-35-3 | 005-007-00-2 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)   | Pictograms Signal Word Code(s) | Hazard Statement Code(s)                         |
|-------------------------------|---|--------------------------------|--|
| 1                             | Repr. 1B  | GHS08; Dgr                     | H360   |
| 2                             | Repr. 1A; Skin Irrit. 2; STOT SE 1; STOT RE 1; STOT SE 3; Eye Irrit. 2; STOT SE 3; Acute Tox. 4 | GHS08; Dgr                     | H315; H370; H372; H335; H319; H336; H332; H360FD |
| 1                             | Repr. 1B  | GHS08; Dgr                     | H360   |
| 2                             | Repr. 1B  | GHS08; Dgr                     | H360   |

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

| Ingredient           | CAS number | Index No     | ECHA Dossier  |
|----------------------|------------|--------------|---------------|
| potassium dichromate | 7778-50-9  | 024-002-00-6 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)   | Pictograms Signal Word Code(s)         | Hazard Statement Code(s)   |
|-------------------------------|---|--|--|
| 1                             | Ox. Sol. 2; Acute Tox. 3; Acute Tox. 4; Skin Corr. 1B; Skin Sens. 1; Acute Tox. 2; Resp. Sens. 1; Muta. 1B; Carc. 1B; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1 | GHS03; GHS08; GHS09; GHS05; GHS06; Dgr | H272; H301; H312; H314; H317; H330; H334; H340; H350; H360; H372; H410 |

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

## CHLORIDE TEST TABLETS

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)   | Pictograms Signal Word Code(s)         | Hazard Statement Code(s)   |
|-------------------------------|---|--|--|
| 2                             | Ox. Sol. 2; Skin Corr. 1B; Skin Sens. 1; Acute Tox. 1; Resp. Sens. 1; Repr. 1B; STOT RE 1; Aquatic Chronic 1; Muta. 1B; Carc. 1A; Aquatic Acute 1; Eye Dam. 1; Acute Tox. 2; Acute Tox. 1; STOT SE 1; STOT SE 1 | Dgr; GHS03; GHS08; GHS09; GHS05; GHS06 | H272; H314; H317; H330; H334; H340; H350; H360; H372; H410; H400; H300; H310; H318; H370 |

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

| Ingredient         | CAS number | Index No     | ECHA Dossier  |
|--------------------|------------|--------------|---------------|
| potassium chromate | 7789-00-6  | 024-006-00-8 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s)   | Pictograms Signal Word Code(s) | Hazard Statement Code(s)   |
|-------------------------------|---|--------------------------------|--|
| 1                             | Skin Irrit. 2; Skin Sens. 1; Eye Irrit. 2; STOT SE 3; Muta. 1B; Carc. 1B; Aquatic Acute 1; Aquatic Chronic 1                                    | GHS08; GHS09; Dgr              | H315; H317; H319; H335; H340; H350; H410                         |
| 2                             | Skin Irrit. 2; Skin Sens. 1; STOT SE 3; Muta. 1A; Aquatic Acute 1; Aquatic Chronic 1; Carc. 1A; Acute Tox. 3; Eye Dam. 1; Acute Tox. 2; Repr. 2 | GHS08; GHS09; Dgr; GHS06       | H315; H317; H335; H340; H410; H350; H400; H301; H318; H330; H361 |

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

## National Inventory Status

| National Inventory                              | Status  |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes   |
| Canada - DSL                                    | Yes   |
| Canada - NDSL                                   | No (silver nitrate; boric acid; potassium dichromate; potassium chromate)   |
| China - IECSC                                   | Yes   |
| Europe - EINEC / ELINCS / NLP                   | Yes   |
| Japan - ENCS                                    | Yes   |
| Korea - KECI                                    | Yes   |
| New Zealand - NZIoC                             | Yes   |
| Philippines - PICCS                             | Yes   |
| USA - TSCA                                      | Yes   |
| Taiwan - TCSI                                   | Yes   |
| Mexico - INSQ                                   | Yes   |
| Vietnam - NCI                                   | Yes   |
| Russia - FBEPH                                  | Yes   |
| <b>Legend:</b>                                  | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

## SECTION 16 Other information

|               |            |
|---------------|------------|
| Revision Date | 07/12/2022 |
| Initial Date  | 24/11/2016 |

## CONTACT POINT

- For quotations contact your local Customer Services - <http://wssdirectory.wilhelmsen.com/#/customerservices> - Responsible for safety data sheet Wilhelmsen Ships Service AS - Prepared by: Compliance Manager, - Email: [wss.global.sdsinfo@wilhelmsen.com](mailto:wss.global.sdsinfo@wilhelmsen.com) - Telephone: Tel.: +47 67584000

## Full text Risk and Hazard codes

|      |   |
|------|---|
| H271 | May cause fire or explosion; strong oxidiser. |
| H272 | May intensify fire; oxidiser.                 |
| H290 | May be corrosive to metals.                   |
| H300 | Fatal if swallowed.                           |
| H301 | Toxic if swallowed.                           |

## CHLORIDE TEST TABLETS

|              |  |
|--------------|--|
| <b>H302</b>  | Harmful if swallowed.  |
| <b>H310</b>  | Fatal in contact with skin.  |
| <b>H312</b>  | Harmful in contact with skin.  |
| <b>H314</b>  | Causes severe skin burns and eye damage.                                   |
| <b>H319</b>  | Causes serious eye irritation.   |
| <b>H330</b>  | Fatal if inhaled.  |
| <b>H332</b>  | Harmful if inhaled.  |
| <b>H334</b>  | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| <b>H335</b>  | May cause respiratory irritation.  |
| <b>H336</b>  | May cause drowsiness or dizziness.   |
| <b>H350i</b> | May cause cancer by inhalation.  |
| <b>H360</b>  | May damage fertility or the unborn child.                                  |
| <b>H361</b>  | Suspected of damaging fertility or the unborn child.                       |
| <b>H370</b>  | Causes damage to organs.   |
| <b>H372</b>  | Causes damage to organs through prolonged or repeated exposure.            |
| <b>H400</b>  | Very toxic to aquatic life.  |

### SDS Version Summary

| Version | Date of Update | Sections Updated  |
|---------|----------------|---|
| 6.11    | 07/12/2022     | Acute Health (inhaled), Acute Health (skin), Acute Health (swallowed), Advice to Doctor, Chronic Health, Classification, Engineering Control, Environmental, Exposure Standard, First Aid (inhaled), First Aid (skin), Ingredients, Personal Protection (Respirator), Physical Properties, Storage (suitable container), Synonyms |

### Other information

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

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

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

- EN 166 Personal eye-protection
- EN 340 Protective clothing
- EN 374 Protective gloves against chemicals and micro-organisms
- EN 13832 Footwear protecting against chemicals
- EN 133 Respiratory protective devices

### Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit.
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL :No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- AII: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers

ENCS: Existing and New Chemical Substances Inventory

KECI: Korea Existing Chemicals Inventory

NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act

TCSI: Taiwan Chemical Substance Inventory

INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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