

# SAFETY DATA SHEET



Storage solution

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

### 1.1 Product identifier

**Product name** : Storage solution  
**Other means of identification** : Not available.

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

**Product use** : Laboratory chemicals.

### 1.3 Details of the supplier of the safety data sheet

 **Manufacturer**  
**Metrohm AG**  
Ionenstrasse  
9100 Herisau  
Switzerland  
Tel.: +41 (0)71 353 85 85  
Fax: +41 (0)71 353 89 01  
E-Mail: [info@metrohm.com](mailto:info@metrohm.com)  
Web: [www.metrohm.com](http://www.metrohm.com)

**Supplier**  
**Metrohm UK Ltd.**  
Metrohm House  
Evenwood Close  
Daresbury Court  
Runcorn Cheshire WA7 1LZ  
United Kingdom

Tel.: +44 (0)1928 579 600  
Fax: +44 (0)1928 532 371  
E-Mail: [info@metrohm.co.uk](mailto:info@metrohm.co.uk)

**e-mail address of person responsible for this SDS** : [datasheet@metrohm.com](mailto:datasheet@metrohm.com)

### 1.4 Emergency telephone number

#### Supplier

**Telephone number** : + 49 (0)6132-84463 (24 h, GBK GmbH)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

#### Classification according to UK CLP/GHS

 Eye Irrit. 2, H319

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

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SECTION 2: Hazards identification

|                                                                                                                                    |                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazard pictograms                                                                                                                  | :                                                                                                                                          |
| Signal word                                                                                                                        | : Warning                                                                                                                                                                                                                   |
| Hazard statements                                                                                                                  | : H319 - Causes serious eye irritation.                                                                                                                                                                                     |
| <b>Precautionary statements</b>                                                                                                    |                                                                                                                                                                                                                             |
| Prevention                                                                                                                         | : P280 - Wear eye or face protection.                                                                                                                                                                                       |
| 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.<br>P337 + P313 - If eye irritation persists: Get medical attention. |
| Storage                                                                                                                            | : Not applicable.                                                                                                                                                                                                           |
| Disposal                                                                                                                           | : Not applicable.                                                                                                                                                                                                           |
| Hazardous ingredients                                                                                                              | : Not applicable.                                                                                                                                                                                                           |
| Supplemental label elements                                                                                                        | : EUH208 - Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.                                                                        |
| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | : Not applicable.                                                                                                                                                                                                           |
| <b>Special packaging requirements</b>                                                                                              |                                                                                                                                                                                                                             |
| Containers to be fitted with child-resistant fastenings                                                                            | : Not applicable.                                                                                                                                                                                                           |
| Tactile warning of danger                                                                                                          | : Not applicable.                                                                                                                                                                                                           |

2.3 Other hazards

|                                                                                                   |                                                                                         |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII | : This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| Other hazards which do not result in classification                                               | : None known.                                                                           |

SECTION 3: Composition/information on ingredients

|              |           |
|--------------|-----------|
| 3.2 Mixtures | : Mixture |
|--------------|-----------|

| Product/ingredient name                                                                       | Identifiers                                                      | %         | Classification                                                                                                                                                                                       | Type    |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Ammonium chloride                                                                             | REACH #:<br>01-2119489385-24<br>EC: 235-186-4<br>CAS: 12125-02-9 | ≥10 - ≤25 | Acute Tox. 4, H302<br>Eye Irrit. 2, H319                                                                                                                                                             | [1] [2] |
| reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) | CAS: 55965-84-9                                                  | <0.0015   | Acute Tox. 3, H301<br>Acute Tox. 2, H310<br>Acute Tox. 2, H330<br>Skin Corr. 1C, H314<br>Eye Dam. 1, H318<br>Skin Sens. 1A, H317<br>Aquatic Acute 1, H400 (M=100)<br>Aquatic Chronic 1, H410 (M=100) | [1]     |

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## SECTION 3: Composition/information on ingredients

|                  |                                                                 |      |                                                                                                                                                                                                                        |         |
|------------------|-----------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| copper dinitrate | REACH #:<br>01-2119969290-34<br>EC: 221-838-5<br>CAS: 3251-23-8 | <0.1 | EUH071<br><br>Ox. Sol. 2, H272<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318<br>Aquatic Acute 1, H400 (M=1)<br>Aquatic Chronic 2, H411<br><br><b>See Section 16 for the full text of the H statements declared above.</b> | [1] [2] |
|------------------|-----------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

### 4.2 Most important symptoms and effects, both acute and delayed

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

## SECTION 4: First aid measures

### 4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, alcohol-resistant foam or water spray (fog). Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous combustion products** : Decomposition products may include the following materials:  
nitrogen oxides  
halogenated compounds (hydrogen chloride)  
Ammonia.

### 5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to British standard BS EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : Not considered to be a product presenting a risk of explosion.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### 6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## SECTION 6: Accidental release measures

**Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Absorb with liquid-binding material (sand, diatomite, universal binders etc.) or use a spill kit.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

### 8.1 Control parameters

#### Occupational exposure limits

| Product/ingredient name | Exposure limit values                                                                                                                                                                                                  |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ammonium chloride       | <b>EH40/2005 WELs (United Kingdom (UK), 1/2020)</b><br>STEL 15 minutes: 20 mg/m <sup>3</sup> . Form: Fume.<br>TWA 8 hours: 10 mg/m <sup>3</sup> . Form: Fume.                                                          |
| copper dinitrate        | <b>EH40/2005 WELs (United Kingdom (UK), 1/2020) [Copper and compounds]</b><br>STEL 15 minutes: 2 mg/m <sup>3</sup> (as Cu). Form: Dusts and Mists.<br>TWA 8 hours: 1 mg/m <sup>3</sup> (as Cu). Form: Dusts and Mists. |

## SECTION 8: Exposure controls/personal protection

### Biological exposure indices

None known.

**Recommended monitoring procedures** : Reference should be made to monitoring standards, such as the following: British Standard BS EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) British Standard BS EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) British Standard BS EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### DNELs/DMELs

**DNEL/DMEL Summary** : Not applicable.

### PNECs

**PNEC Summary** : Not applicable.

## 8.2 Exposure controls

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Recommended:** Wear suitable gloves tested to EN374.

Material: Chloroprene, natural rubber (latex), thickness:  $\geq 0.11$  mm.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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## SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

#### Appearance

|                                              |                       |
|----------------------------------------------|-----------------------|
| Physical state                               | : Liquid.             |
| Colour                                       | : Colourless.         |
| Odour                                        | : Odourless.          |
| Odour threshold                              | : Not available.      |
| Melting point/freezing point                 | : Not available.      |
| Initial boiling point and boiling range      | : 100°C (212°F)       |
| Flammability (solid, gas)                    | : Not applicable.     |
| Upper/lower flammability or explosive limits | : Not available.      |
| Flash point                                  | : Not applicable.     |
| Auto-ignition temperature                    | : Not self-ignitable. |

| Ingredient name   | °C   | °F   | Method |
|-------------------|------|------|--------|
| Ammonium chloride | >400 | >752 |        |

|                                        |                                                                                                                                  |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Decomposition temperature              | : Not available.                                                                                                                 |
| pH                                     | : 4.5 to 5                                                                                                                       |
| Viscosity                              | : Dynamic (room temperature): Not available.<br>Kinematic (room temperature): Not available.<br>Kinematic (40°C): Not available. |
| Solubility in water                    | : Miscible in water.                                                                                                             |
| Miscible with water                    | : Yes.                                                                                                                           |
| Partition coefficient: n-octanol/water | : Not applicable.                                                                                                                |
| Vapour pressure                        | : Not available.                                                                                                                 |
| Evaporation rate                       | : Not available.                                                                                                                 |
| Relative density                       | : Not available.                                                                                                                 |
| Density                                | : 1.04249 g/cm <sup>3</sup> [20°C (68°F)]                                                                                        |
| Vapour density                         | : Not available.                                                                                                                 |
| Explosive properties                   | : Not considered to be a product presenting a risk of explosion.                                                                 |
| Oxidising properties                   | : Not available.                                                                                                                 |
| Particle characteristics               |                                                                                                                                  |
| Median particle size                   | : Not applicable.                                                                                                                |

### 9.2 Other information

Not available.

## SECTION 10: Stability and reactivity

|                                         |                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------|
| 10.1 Reactivity                         | : No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability                 | : The product is stable.                                                                     |
| 10.3 Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur.            |
| 10.4 Conditions to avoid                | : Keep away from heat, sparks and flame.                                                     |

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## SECTION 10: Stability and reactivity

**10.5 Incompatible materials** : Reactive or incompatible with the following materials: Strong oxidising materials, strong acids, strong alkalis.

**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

| Product/ingredient name                                                                                                                                                                                                                         | Result and Species                      | Dose [Exposure]      | Remarks |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------|---------|
|  ammonium chloride<br><br>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) | Oral - Rat - LD50 [OECD 401]            | 1410 mg/kg           | -       |
|                                                                                                                                                                                                                                                 | Dermal - Rat - LD50                     | >2000 mg/kg          | -       |
|                                                                                                                                                                                                                                                 | Dermal - Rabbit - LD50                  | 92.4 mg/kg           | -       |
|                                                                                                                                                                                                                                                 | Oral - Rat - LD50                       | 64 to 66 mg/kg       | -       |
|                                                                                                                                                                                                                                                 | Dermal - Rat - LD50                     | 141 mg/kg            | -       |
|                                                                                                                                                                                                                                                 | Inhalation - Rat - LC50 Dusts and mists | 0.169 mg/l [4 hours] | -       |
|                                                                                                                                                                                                                                                 |                                         |                      |         |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Acute toxicity estimates

| Product/ingredient name                                                                              | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|------------------------------------------------------------------------------------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
|  Storage solution | 8785.0       | N/A            | N/A                      | N/A                         | N/A                                 |
| ammonium chloride                                                                                    | 1410         | N/A            | N/A                      | N/A                         | N/A                                 |
| reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)        | 100          | 92.4           | N/A                      | N/A                         | 0.169                               |

#### Irritation/Corrosion

| Product/ingredient name                                                                                                                                                                                                                           | Result and Species                          | Exposure | Remarks |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------|---------|
|  ammonium chloride<br><br>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) | Eyes - Rabbit - Irritant - [OECD 405]       | -        | -       |
|                                                                                                                                                                                                                                                   | Skin - Rabbit - Non-irritating to the skin. | -        | -       |
|                                                                                                                                                                                                                                                   | Skin - Rabbit - Severe irritant             | -        | -       |
|                                                                                                                                                                                                                                                   | Eyes - Rabbit - Severe irritant             | -        | -       |

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## SECTION 11: Toxicological information

### Conclusion/Summary

**Skin** : Based on available data, the classification criteria are not met.

**Eyes** : Causes serious eye irritation.

**Respiratory** : Not available.

### Respiratory or skin sensitization

| Product/ingredient name                                                                                                               | Route of exposure and Species                       | Result          | Remarks |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------|---------|
| Ammonium chloride                                                                                                                     | skin - Guinea pig<br>[Buehler or maximisation test] | Not sensitizing | -       |
| reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) | skin - Guinea pig                                   | Sensitising     | -       |

### Conclusion/Summary

**Skin** : Based on available data, the classification criteria are not met.

**Respiratory** : Not available.

### Mutagenicity

| Product/ingredient name | Result   | Experiment       | Remarks |
|-------------------------|----------|------------------|---------|
| Ammonium chloride       | Negative | Bacteria         | -       |
|                         | Negative | Mammalian-Animal | -       |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

| Product/ingredient name | Result                      | Species and Route of exposure    | Dose [Exposure] | Remarks |
|-------------------------|-----------------------------|----------------------------------|-----------------|---------|
| Ammonium chloride       | Fertility effects: Negative | Mammal - species unspecified - - | -               | -       |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : Causes serious eye irritation.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

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## SECTION 11: Toxicological information

### Symptoms related to the physical, chemical and toxicological characteristics

|                     |                                                                                            |
|---------------------|--------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Adverse symptoms may include the following:<br>pain or irritation<br>watering<br>redness |
| <b>Inhalation</b>   | : No specific data.                                                                        |
| <b>Skin contact</b> | : No specific data.                                                                        |
| <b>Ingestion</b>    | : No specific data.                                                                        |

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

|                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

#### Long term exposure

|                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

#### Potential chronic health effects

Not available.

|                              |                                                     |
|------------------------------|-----------------------------------------------------|
| <b>Conclusion/Summary</b>    | : Not available.                                    |
| <b>General</b>               | : No known significant effects or critical hazards. |
| <b>Carcinogenicity</b>       | : No known significant effects or critical hazards. |
| <b>Mutagenicity</b>          | : No known significant effects or critical hazards. |
| <b>Reproductive toxicity</b> | : No known significant effects or critical hazards. |

#### Other information

Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name | Result [Exposure]                                  | Species                             | Remarks     |
|-------------------------|----------------------------------------------------|-------------------------------------|-------------|
| Ammonium chloride       | Acute - LC50<br>42.91 mg/l [96 hours]<br>[EPA]     | Fish - <i>Oncorhynchus mykiss</i>   | -           |
|                         | Acute - EC50<br>98.5 mg/l - Static [48 hours]      | Daphnia - <i>Ceriodaphnia dubia</i> | -           |
|                         | Acute - EC50<br>850 mg/l [0.5 hours]<br>[OECD 209] | Activated sludge                    | -           |
|                         | Acute - LC50<br>46.27 mg/l [96 hours]              | Fish - <i>Prosopium williamsoni</i> | -           |
|                         | Acute - EC50<br>136.6 mg/l - Static [48 hours]     | Daphnia - <i>Daphnia magna</i>      | -           |
|                         | Acute - EC50<br>1300 mg/l - Static [5 days]        | Algae - <i>Chlorella vulgaris</i>   | read-across |
|                         | Acute - EC50<br>2700 mg/l - Static [18 days]       | Algae - <i>Chlorella vulgaris</i>   | read-across |

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## SECTION 12: Ecological information

|                                                                                                                                       |                                                     |                                   |   |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------|---|
| reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) | Chronic - EC10<br>4.28 mg/l [30 days]               | Fish - <i>Lepomis macrochirus</i> | - |
|                                                                                                                                       | Acute - LC50<br>0.19 mg/l [96 hours]                | Fish - <i>Oncorhynchus mykiss</i> | - |
|                                                                                                                                       | Acute - EC50<br>0.16 mg/l [48 hours]                | Daphnia - <i>Daphnia magna</i>    | - |
|                                                                                                                                       | Chronic - NOEC<br>0.0004 mg/l [48 hours] [OECD 201] | Algae                             | - |

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

### 12.2 Persistence and degradability

**Conclusion/Summary** : There are no data available on the mixture itself.

| Product/ingredient name                                                                                                               | Aquatic half-life | Photolysis | Biodegradability |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------|------------------|
| reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) | -                 | -          | Readily          |
| copper dinitrate                                                                                                                      | -                 | -          | Readily          |

### 12.3 Bioaccumulative potential

| Product/ingredient name                                                                                                               | LogP <sub>ow</sub> | BCF | Potential |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----------|
| ammonium chloride                                                                                                                     | -3.2               | -   | Low       |
| reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) | -0.486 to 0.401    | -   | Low       |

### 12.4 Mobility in soil

**Soil/water partition coefficient** : Not available.

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

| Product/ingredient name                                                                       | PBT | P   | B   | T   | vPvB | vP  | vB  |
|-----------------------------------------------------------------------------------------------|-----|-----|-----|-----|------|-----|-----|
| ammonium chloride                                                                             | No  | No  | No  | No  | No   | No  | No  |
| reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) | N/A | N/A | N/A | Yes | N/A  | N/A | N/A |
| copper dinitrate                                                                              | No  | No  | No  | No  | No   | No  | No  |

Storage solution

## SECTION 12: Ecological information

**12.6 Other adverse effects** : No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance.

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible.

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

|                                        | ADR/RID        | ADN            | IMDG                 | IATA           |
|----------------------------------------|----------------|----------------|----------------------|----------------|
| <b>14.1 UN number</b>                  | Not regulated. | Not regulated. | Not regulated.       | Not regulated. |
| <b>14.2 UN proper shipping name</b>    | -              | -              | -                    | -              |
| <b>14.3 Transport hazard class(es)</b> | -              | -              | -                    | -              |
| <b>Label</b>                           |                |                |                      |                |
| <b>14.4 Packing group</b>              | -              | -              | -                    | -              |
| <b>14.5 Environmental hazards</b>      | No.            | No.            | Marine Pollutant: No | No.            |

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Transport in bulk according to IMO instruments** :  Not intended.

Storage solution

## SECTION 15: Regulatory information

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

#### UK (GB)/REACH

##### Annex XIV - List of substances subject to authorisation

###### Annex XIV

None of the components are listed.

###### Substances of very high concern

None of the components are listed.

##### Ozone depleting substances

Not listed.

##### Prior Informed Consent (PIC)

Not listed.

##### Persistent Organic Pollutants

Not listed.

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

| Product/ingredient name | %         | Designation [Usage] |
|-------------------------|-----------|---------------------|
| Storage solution        | ≥90       | 3                   |
| ammonium chloride       | ≥10 - ≤25 | 65                  |

**Labelling** : Not applicable.

#### Seveso Directive

This product is not controlled under the Seveso Directive.

**Product type** : Liquid.

Avoid exposure. After accidental exposure, seek immediate medical attention. Do not induce vomiting.

Product waste and emptied containers should be disposed of in accordance with local waste regulations. Do not reuse container.

Do not allow to enter drains or watercourses.

**Expiry date** : Not available.

#### EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

#### International regulations

##### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

##### Montreal Protocol

Not listed.

##### Stockholm Convention on Persistent Organic Pollutants

Not listed.

##### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

##### UNECE Aarhus Protocol on POPs and Heavy Metals

Storage solution

## SECTION 15: Regulatory information

Not listed.

### OECD Comprehensive Global PFAS Database

Not listed.

### Inventory list

|                                |                                                                                                                            |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Canada</b>                  | : All components are listed or exempted.                                                                                   |
| <b>China</b>                   | : All components are listed or exempted.                                                                                   |
| <b>Colombia</b>                | :  All components are listed or exempted. |
| <b>Eurasian Economic Union</b> | : <b>Russian Federation inventory:</b> All components are listed or exempted.                                              |
| <b>Japan</b>                   | : <b>Japan inventory (CSCL):</b><br>All components are listed or exempted.                                                 |
| <b>New Zealand</b>             | : All components are listed or exempted.                                                                                   |
| <b>Philippines</b>             | : All components are listed or exempted.                                                                                   |
| <b>Republic of Korea</b>       | : All components are listed or exempted.                                                                                   |
| <b>Taiwan</b>                  | : All components are listed or exempted.                                                                                   |
| <b>Thailand</b>                | : All components are listed or exempted.                                                                                   |
| <b>Viet Nam</b>                | : All components are listed or exempted.                                                                                   |

|                                        |                                                                                              |
|----------------------------------------|----------------------------------------------------------------------------------------------|
| <b>15.2 Chemical safety assessment</b> | : This product contains substances for which Chemical Safety Assessments are still required. |
|----------------------------------------|----------------------------------------------------------------------------------------------|

## SECTION 16: Other information

 Indicates information that has changed from previously issued version.

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Abbreviations and acronyms</b> | <ul style="list-style-type: none"> <li>: ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway</li> <li>ADR = Agreement concerning the International Carriage of Dangerous Goods by Road</li> <li>ATE = Acute Toxicity Estimate</li> <li>BCF = Bioconcentration Factor</li> <li>CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]</li> <li>DMEL = Derived Minimal Effect Level</li> <li>DNEL = Derived No Effect Level</li> <li>EUH statement = CLP-specific Hazard statement</li> <li>EWC = European Waste Catalogue</li> <li>IATA = International Air Transport Association</li> <li>IBC = Intermediate Bulk Container</li> <li>IMDG = International Maritime Dangerous Goods</li> <li>LogPow = logarithm of the octanol/water partition coefficient</li> <li>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)</li> <li>N/A = Not available</li> <li>PBT = Persistent, Bioaccumulative and Toxic</li> <li>PNEC = Predicted No Effect Concentration</li> <li>RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail</li> <li>RRN = REACH Registration Number</li> <li>SGG = Segregation Group</li> <li>vPvB = Very Persistent and Very Bioaccumulative</li> </ul> |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Procedure used to derive the classification

| Classification                                                                                        | Justification      |
|-------------------------------------------------------------------------------------------------------|--------------------|
|  Eye Irrit. 2, H319 | Calculation method |

### Full text of abbreviated H statements

Storage solution

## SECTION 16: Other information

|        |                                                       |
|--------|-------------------------------------------------------|
| H272   | May intensify fire; oxidiser.                         |
| H301   | Toxic if swallowed.                                   |
| H302   | Harmful if swallowed.                                 |
| H310   | Fatal in contact with skin.                           |
| H314   | Causes severe skin burns and eye damage.              |
| H317   | May cause an allergic skin reaction.                  |
| H318   | Causes serious eye damage.                            |
| H319   | Causes serious eye irritation.                        |
| H330   | Fatal if inhaled.                                     |
| H400   | Very toxic to aquatic life.                           |
| H410   | Very toxic to aquatic life with long lasting effects. |
| H411   | Toxic to aquatic life with long lasting effects.      |
| EUH071 | Corrosive to the respiratory tract.                   |

### Full text of classifications

|                   |                                                 |
|-------------------|-------------------------------------------------|
| Acute Tox. 2      | ACUTE TOXICITY - Category 2                     |
| Acute Tox. 3      | ACUTE TOXICITY - Category 3                     |
| Acute Tox. 4      | ACUTE TOXICITY - Category 4                     |
| Aquatic Acute 1   | SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1  |
| Aquatic Chronic 1 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 |
| Aquatic Chronic 2 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 |
| Eye Dam. 1        | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  |
| Eye Irrit. 2      | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  |
| Ox. Sol. 2        | OXIDISING SOLIDS - Category 2                   |
| Skin Corr. 1B     | SKIN CORROSION/IRRITATION - Category 1B         |
| Skin Corr. 1C     | SKIN CORROSION/IRRITATION - Category 1C         |
| Skin Sens. 1A     | SKIN SENSITISATION - Category 1A                |

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### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.