

RETICULIN KIT

The kit contains:

4% formaldehyde, alcoholic solution

Ammonium iron sulfate, solution

Oxalic acid, 1% solution

Potassium permanganate, 0.5% solution

Silver ammonia solution

Sodium thiosulfate, 5% solution




Sulfuric acid, 3% solution

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| SECTION 1: Identification of the substance/mixture and of the company/undertaking | | |
|---|---|--|
| 1.1. | Product identifier | |
| | Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION |
| | Chemical name: | - |
| | Catalogue number: | F4A-OT-X** |
| 1.2. | Relevant identified uses of the substance or mixture and uses advised against | |
| | Uses: | For use with Reticulin and Reticulin Contrast staining kits. |
| | Uses advised against: | Only the identified uses are advised. |
| | Reasons why uses advised against: | The product is intended for use only as an <i>in vitro</i> diagnostic medical device, registered at the Agency for Medicinal Products and Medical Devices and there is no reason to use it for other purposes. |
| 1.3. | Details of the supplier of the safety data sheet | |
| | Supplier: | BioGnost Ltd. |
| | Address: | Medjugorska 59, Zagreb |
| | Telephone number: | +385 1 2409997 |
| | Telefax: | +385 1 2404039 |
| | e-mail of competent person: | msds@biognost.hr |
| | National contact: | - |
| 1.4. | Emergency telephone numbers | |
| | National Protection and Rescue Directorate: | 112 |
| | Medical information: | +385 1 2348 342 |
| | Other information: | - |

| SECTION 2. Hazards identification | | |
|---|--|-------------------------------------|
| 2.1. | Classification of the substance or mixture | |
| 2.1.1. | Classification according to Regulation (EC) No 1272/2008 (CLP) | |
| | Hazard class and category code: | Hazard statement*: |
| | Flam. Liq. 2 | H225 |
| | Skin Sens. 1 | H317 |
| | Muta. 2 | H341 |
| | Carc. 1B | H350 |
| 2.1.2. | Additional information | |
| | - | |
| *For full text of Hazard- and EU Hazard-statements: see Section 16. | | |
| 2.2. | Label elements | |
| | Product identification: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | | |
|------|--|---|
| | Identification number: | - |
| | Authorisation number: | - |
| | Hazard pictograms: | <div align="center">  GHS02  GHS08  GHS07 </div> |
| | Signal word: | Danger |
| | Hazard statement: | H225 Highly flammable liquid and vapor. H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects. H350 May cause cancer. |
| | Precautionary statement: | P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P280 Wear protective gloves/protective clothing/eye/protection/face protection. P302 + P352 IF ON SKIN: Wash with plenty of water. P308+P313 IF exposed or concerned: Get medical advice/attention. |
| | Supplemental hazard information (EU): | - |
| 2.3. | Other hazards | |
| | This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. | |

| SECTION 3. Composition/information on ingredients | | | | |
|---|-----------------------------|--------------------------------|---------------------|--|
| CAS/ EC/ Index number | REACH Registration No | Weight % content (or range) | Identification name | Classification according to Regulation (EC) No 1272/2008 (CLP) |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | | | | |
|--|---|-----------|------------------|---|
| 64-17-5/ 200-578-6/ 603-002-00-5 | - | 50 – 70 % | ethanol | Flam. Liq. 2; H225 |
| 30525-89-4/ 608-494-5/ - | - | 3 – 4 % | paraformaldehyde | Acute Tox. 4; H302 Skin Irr. 2; H315 Skin Sens. 1; H317 Eye Dam. 1; H318 Acute Tox. 4; H332 STOT SE 3; H335 Muta. 2; H341 Carc. 1B; H350 |

| SECTION 4. First aid measures | | |
|-------------------------------|---|--|
| 4.1. | Description of first aid measures | |
| | General notes: | If the suggested first aid measures do not prove sufficient, seek medical attention. |
| | Following inhalation: | Carry the afflicted person out of the contaminated area into a well-ventilated area or out for fresh air. In case of difficult breathing, provide the afflicted person with oxygen. |
| | Following skin contact: | Remove all contaminated clothes using sterile gauze. Immediately wash with plenty of water for at least 20 minutes. Seek medical assistance if the symptoms of irritation remain. |
| | Following eye contact: | Rinse out with plenty of water with the eyelid held wide open for at least 20 minutes. If the symptoms remain, immediately call in ophthalmologist. |
| | Following ingestion: | Rinse the oral cavity, drink 1-2 glasses of water. Do not induce vomiting. Immediately consult a physician and show the container or label. In case of swallowing large quantities, transport the afflicted person to the hospital. |
| | Self-protection of the first aider | - |
| 4.2. | Most important symptoms and effects, both acute and delayed | |
| | Following inhalation: | Depending on concentration and exposure time, irritation of the mucous membrane of the nose/throat may occur (burning sensation, urge to sneeze, runny nose). High concentration levels may cause difficult breathing, coughing, chest tightness, headache, pneumonia and pulmonary edema. |
| | Following skin contact: | Depending on concentration and exposure time, redness accompanied by sensation of stinging and pain may occur, defatting, skin cracking, rash, swelling, burns, blisters and delayed onset of inflammations. |
| | Following eye contact: | Depending on concentration and exposure time, mucosa stinging, lacrimation, redness and pain may occur, as well as bleeding, delayed onset of inflammations and permanent eyesight damage. |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | | |
|------|--|---|
| | Following ingestion: | Depending on concentration and exposure time, stinging and possible damage to the mucous membrane of the digestive tract is possible, as well as abdominal pain, nausea, vomiting (bloody vomit is possible), vertigo, headache, eyesight disorders and permanent blindness due to optical nerve damage, loss of consciousness. |
| 4.3. | Indication of any immediate medical attention and special treatment needed | |
| | - | |

| | | |
|---|--|--|
| SECTION 5. Firefighting measures | | |
| 5.1. | Extinguishing media | |
| | Suitable extinguishing media: | water spray or alcohol-resistant foam, dry powder, CO ₂ |
| | Unsuitable extinguishing media: | No information available |
| 5.2. | Special hazards arising from the substance or mixture | |
| | Hazardous by products of fire: | Possible liberation of toxic carbon monoxide and formaldehyde gases due to thermal decomposition (increased temperature). Explosive mixtures of formaldehyde vapors and air also present danger. |
| 5.3. | Advice for firefighters | |
| | Use a self-contained open-circuit compressed air breathing apparatus and fireproof clothing. Cool closed containers exposed to fire with water spray, in order to prevent explosion. | |
| 5.4. | Additional information | |
| | Remove sources of heat and ignition. Do not contaminate the environment with extinguishing media. | |

| | | |
|---|---|---|
| SECTION 6. Accidental release measures | | |
| 6.1. | Personal precautions, protective equipment and emergency procedures | |
| 6.1.1. | For non-emergency personnel: | |
| | Protective equipment: | Use personal protective equipment (see Section 8). |
| | Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Avoid breathing vapors and avoid contact with skin and eyes. Remove all sources of sparks and ignition. Do not smoke. |
| | Emergency procedures: | Mark the area using proper signs. |
| 6.1.2. | For emergency responders: | |
| | Use protective equipment; in case of inadequate ventilation use adequate airways protective equipment (see Section 8). | |
| 6.2. | Environmental precautions: | |
| | Do not dispose of in sewage, drainage system and waterways. In case of large spillage contact National Protection and Rescue Directorate (NPRD) on 112. | |
| 6.3. | Methods and materials for containment and cleaning up | |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | | |
|--------|--|---|
| 6.3.1. | Bunding, covering of drains; capping procedures: | Sand or clay barriers. |
| 6.3.2. | Cleaning up: | Where possible, the substance can be absorbed by using inflammable material (sand, diatomaceous earth, vermiculite). Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water. |
| 6.3.3. | Other information: | Do not use incompatible materials (see Section 10). |
| 6.4. | Reference to other sections | |
| | - | |

| SECTION 7. Handling and storage | | |
|---------------------------------|--|--|
| 7.1. | Precautions for safe handling | |
| 7.1.1. | Protection measures | |
| | Measures to prevent fire: | Use in well ventilated storage rooms. Keep away from sources of heat and ignition. Carry out measures for preventing static electricity. |
| | Measures to prevent aerosol and dust formation: | Secure proper ventilation. |
| | Measures to protect the environment: | Prevent spilling into the sewage system and waterways. |
| | Other measures: | - |
| 7.1.2. | Advice on general occupational hygiene: | |
| | Do not eat, drink or smoke in the workspace. Thoroughly wash hands after work and before eating. | |
| 7.2. | Conditions for safe storage, including any incompatibilities | |
| | Technical measures and storage conditions: | Keep in tightly closed and upright set containers in a well ventilated storage rooms at temperatures ranging from 15 to 25 °C. |
| | Containers materials: | Manufacturer's original packaging. |
| | Requirements for storage and containers: | Keep away from food and drink. Keep the containers tightly closed. |
| | Advices for storage equipment: | The storage must be made of hard material; floors must be resistant to chemicals. There must be no drain that directly leads into sewage system. Secure proper ventilation. |
| | Other information on storage conditions: | Do not place the unused material in the storage room and do not use empty containers for storing other chemicals. Do not store with incompatible materials (see Section 10). |
| 7.3. | Specific end use(s) | |
| | Recommendations: | - |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | |
|---------------------------------------|---|
| Industrial sector specific solutions: | - |
|---------------------------------------|---|

| SECTION 8. Exposure controls/personal protection | | | | |
|--|----------------------|--|----------------------|---------------------------|
| 8.1. | Control parameters | | | |
| Substance | CAS No | Occupational exposure limit values/short term values | | Biological limit values |
| | | ppm | mg/m³ | |
| Ethanol | 64-17-5 | 1000/- | 1900/- | - |
| | | | | |
| Substance: | - | | | |
| EC No: | - | CAS No.: | - | |
| DNEL | | | | |
| Industrial | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | 1900 mg/m³ (ethanol) | - | - | 380 mg/m³ (ethanol) |
| Dermal | - | - | - | 343 mg/kg (ethanol) |
| Critical physical parameters: solubility, flammability, corrosivity: | | | - | |
| Consumer | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | 87 mg/kg bw/day (ethanol) |
| Inhalation | 950 mg/m³ (ethanol) | - | - | 114 mg/m³ (ethanol) |
| Dermal | - | - | - | 206 mg/kg (ethanol) |
| PNEC | | | | |
| Environmental protection target | | PNEC | | |
| Fresh water | | 0.96 mg/l (ethanol) | | |
| Fresh water sediments | | 3.6 mg/kg (ethanol) | | |
| Salt water | | 0.79 mg/l (ethanol) | | |
| Salt water sediments | | 2.9 mg/kg (ethanol) | | |
| Food chain | | 380-720 mg/kg (ethanol) | | |
| Microorganisms in sewage treatment | | 580 mg/l (ethanol) | | |
| Soil (agricultural) | | 0.63 mg/kg (ethanol) | | |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | | |
|----------|--|--|
| Air | | no information available |
| | | |
| 8.2. | Exposure controls | |
| 8.2.1. | Appropriate engineering controls | |
| | Substance/mixture related measures to prevent exposure during identified uses: | Use the product in well ventilated rooms. Use personal protective equipment. Do not eat, drink or smoke in the workspace. |
| | Structural measures to prevent exposure: | No information available |
| | Organisational measures to prevent exposure: | Organization of work in order to reduce other worker's influence during work process. |
| | Technical measures to prevent exposure: | Secure proper workspace ventilation in order to keep concentration levels in air below permitted levels. |
| 8.2.2. | Personal protection equipment | |
| 8.2.2.1. | Eye and face protection: | Safety glasses that stick to face (EN 166) or visor in case of lower levels of concentration in air; protective gas mask that covers the entire face in case of higher levels of concentration in air. |
| 8.2.2.2. | Skin protection | |
| | Hand protection: | <p>The protective gloves have to satisfy the specification of Regulation (EU) 2016/425 and the related standard EN374.</p> <p>Full contact:</p> <p style="padding-left: 40px;">Material: Nitrile rubber</p> <p style="padding-left: 40px;">Minimum layer thickness: 0,11 mm</p> <p style="padding-left: 40px;">Break through time: 480 min</p> <p>Splash contact:</p> <p style="padding-left: 40px;">Material: Nitrile rubber</p> <p style="padding-left: 40px;">Minimum layer thickness: 0,11 mm</p> <p style="padding-left: 40px;">Break through time: 480 min</p> |
| | Other skin protection: | Complete suit protecting against chemicals (EN 340) The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace and shoes that cover the entire foot. |
| 8.2.2.3. | Respiratory protection: | Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type P3 (EN 143) respirator cartridges as a backup to engineering controls. |
| 8.2.2.4. | Thermal hazards: | No information available |
| 8.2.3. | Environmental exposure controls | |
| | Substance/mixture related measures to prevent exposure: | See Section 6 |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | |
|--|---|
| Structural measures to prevent exposure: | Use modern equipment. |
| Organisational measures to prevent exposure: | Adapt the work process to the required working conditions of the workplace. |
| Technical measures to prevent exposure: | See Section 6 |

| SECTION 9. Physical and chemical properties | | | |
|---|---|--------------------------------|--------------------------|
| 9.1. | Information on basic physical and chemical properties | | |
| | | Value | Method |
| | Physical state: | liquid | No information available |
| | Color: | colorless | No information available |
| | Odour/odour threshold: | sharp/no information available | No information available |
| | Melting point / freezing point: | No information available | No information available |
| | Boiling point or initial boiling point and boiling range: | No information available | No information available |
| | Flammability: | No information available | No information available |
| | Lower and upper explosion limit: | No information available | No information available |
| | Flash point: | 21 °C | No information available |
| | Auto-ignition temperature: | No information available | No information available |
| | Decomposition temperature: | No information available | No information available |
| | pH: | No information available | No information available |
| | Kinematic viscosity: | No information available | No information available |
| | Solubility: | No information available | No information available |
| | Partition coefficient n-octanol/water (log value): | No information available | No information available |
| | Vapour pressure: | No information available | No information available |
| | Density and/or relative density | No information available | No information available |
| | Relative vapour density: | No information available | No information available |
| | Particle characteristics: | No information available | No information available |
| 9.2. | Other information | | |
| | - | | |

| SECTION 10.: Stability and reactivity | |
|---------------------------------------|--|
| 10.1. | Reactivity: See subsections 10.3 through 10.5. |

| | | | | | |
|---------------|--|----------------------|------------------|----------|---|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: | 4 |

| | | |
|-------|-------------------------------------|---|
| 10.2. | Chemical stability: | The product is chemically stable under standard ambient conditions of storing and using (room temperature). |
| 10.3. | Possibility of hazardous reactions: | No information available |
| 10.4. | Conditions to avoid: | No information available |
| 10.5. | Incompatible materials: | Strong oxidizing agents. |
| 10.6. | Hazardous decomposition products: | Carbon oxides. |

| SECTION 11. Toxicological information | | | | | | |
|---------------------------------------|---|---------|---|--------------------------|--|------|
| 11.1. | Information on toxicological effects | | | | | |
| | Acute toxicity: | | | | | |
| Route of exposure: | Method | Species | Effective Dose LD ₅₀ /LC ₅₀ or ATE _{mixture} | Exposure time | Results | |
| Oral | No information available | rat | LD ₅₀ | No information available | 7.060 mg/kg (ethanol) 800 mg/kg (paraformaldehyde) | |
| Dermal | No information available | rabbit | LD ₅₀ | No information available | >20.000 mg/kg (ethanol) 10.000 mg/kg (paraformaldehyde) | |
| Inhalation | No information available | rat | LC ₅₀ | 4 h | >8.000 mg/l (ethanol) 1.07 mg/l (paraformaldehyde) | |
| | | | | | | |
| | Specific target organ toxicity - single exposure (STOT-SE): | | | | | |
| | Specific effects | | Target organ | | Note | |
| Oral | No information available | | No information available | | - | |
| Dermal | No information available | | No information available | | - | |
| Inhalation | No information available | | No information available | | - | |
| | | | | | | |
| | Aspiration hazard: | | no information available | | | |
| | | | | | | |
| | Irritation and corrosion | | | | | |
| Exposure time | | | Species | Evaluation | Method | Note |

| | | | | | |
|---------------|--|----------------------|------------------|----------|---|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: | 4 |

| | | | | | |
|--------------------------------|---|---|---|---|--------------------------|
| Skin corrosion/irritation: | - | - | - | - | no information available |
| Serious eye damage/irritation: | - | - | - | - | no information available |

| | | | | | |
|----------------------------|--------------------------------------|--|--|--|--|
| Sensitization | | | | | |
| Skin sensitization: | May cause an allergic skin reaction. | | | | |
| Respiratory sensitization: | No information available. | | | | |

| | | | | | |
|--|---|--|--|--|--|
| Symptoms related to the physical, chemical and toxicological characteristics | | | | | |
| Oral exposure: | Depending on concentration and exposure time, mucous membranes with retrosternal and abdominal pain, cramps, bloody vomiting, cyanosis, respiratory insufficiency, danger of perforation of the esophagus, stomach and small intestine; absorptive-toxic effects; delayed development of strictures possible. | | | | |
| Dermal exposure: | Depending on concentration and exposure time, superficial coagulation necrosis with hardening and tanning of the skin as well as anesthesia, allergic skin reactions (periorbital edema, urticaria, delayed development of eczema). | | | | |
| Inhalation exposure: | Depending on concentration and exposure time, irritation to the mucous membranes of the nose/throat (burning sensation, urge to sneeze, running nose), possibly even asthmoid reactions; for higher concentrations severe difficulty in breathing, fits of coughing, tightness in the chest, headache, reactions of the circulatory system, danger of glottic edema/cramp, bronchospasm, possible bronchiolitis, pneumonia, pulmonary edema | | | | |
| Eye exposure: | Dependent on the intensity of exposure slight, reversible irritation through to permanent corneal lesion: seriousness probably only visible after a latency period of some hours. | | | | |

| | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Repeated dose toxicity (subacute, subchronic, chronic) | | | | | | |
| | Dose | Exposure time | Species | Method | Evaluation | Note |
| Subacute oral | No information available | No information available | No information available | No information available | No information available | - |
| Subacute dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | No information available | No information available | No information available | - |

| | | | | | |
|---------------|--|----------------------|------------------|----------|---|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: | 4 |

| | | | | | | |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| Subchronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Chronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Chronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | No information available | No information available | No information available | - |

| | | | |
|---|--------------------------|--------------------------|------|
| Specific target organ toxicity - repeated exposure (STOT-RE): | | | |
| | Specific effects | Target organ | Note |
| Subacute oral | No information available | No information available | - |
| Subacute dermal | No information available | No information available | - |
| Subacute inhaling | No information available | No information available | - |
| Subchronic oral | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | - |
| Subchronic inhaling | No information available | No information available | - |
| Chronic oral | No information available | No information available | - |
| Chronic dermal | No information available | No information available | - |
| Chronic inhaling | No information available | No information available | - |

| | |
|--|--|
| CMR effects (carcinogenicity, mutagenicity, reproductive toxicity) | |
| Carcinogenicity: | Presumed to have carcinogenic potential for humans |
| Mutagenicity <i>In-vitro</i> : | No information available |
| Genotoxicity: | No information available |
| Mutagenicity <i>In-vivo</i> : | No information available |
| Germ cell mutagenicity: | Suspected of causing genetic defects. |
| Reproductive toxicity: | No information available |

| | | | | | |
|---------------|--|----------------------|------------------|----------|---|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: | 4 |

| | | |
|---------|---|--------------------------|
| | Summary of evaluation of the CMR properties: | No information available |
| 11.2. | Information on other hazards: | |
| 11.2.1. | Endocrine disrupting properties: | |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. | |
| 11.2.2. | Other informations: | |
| | - | |

| SECTION 12. Ecological information | | | | | | |
|------------------------------------|------------------|---------------|--|--------------------------|---------------------------------|------|
| 12.1. | Toxicity | | | | | |
| Acute (short-term) toxicity | Dose | Exposure time | species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | <i>Oncorhynchus mykiss</i> (rainbow trout) | No information available | 46 – 78 mg/l (paraformaldehyde) | - |
| Crustacea: | EC ₅₀ | 48 hours | <i>Daphnia magna</i> (water flea) | No information available | 42 mg/l (paraformaldehyde) | - |
| Algae/aquatic plants: | IC ₅₀ | 8 days | No information available | No information available | No information available | - |
| Other organisms: | - | - | - | - | - | - |
| Chronic (long-term) toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | No information available | No information available | No information available | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | No information available | - |
| Algae/aquatic plants: | IC ₅₀ | 72 hours | No information available | No information available | No information available | - |

| | | | | | |
|---------------|--|----------------------|------------------|----------|---|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: | 4 |

| | | | | | |
|------------------|---|---|---|---|---|
| Other organisms: | - | - | - | - | - |
|------------------|---|---|---|---|---|

12.2. Persistence and degradability

Abiotic degradation

| | Degradation half-lives | Method | Evaluation | Note |
|--------------|--------------------------|--------------------------|--------------------------|------|
| Marine water | No information available | No information available | No information available | - |
| Fresh water | No information available | No information available | No information available | - |
| Air | No information available | No information available | No information available | - |
| Soil | No information available | No information available | No information available | - |

Biodegradation

| % Degradation | Time (days) | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

12.3. Bioaccumulative potential

Octanol/water partition coefficient (log Pow):

| Value | Concentration | pH | °C | Method | Evaluation | Note |
|--------------------------|--------------------------|----|----|--------------------------|--------------------------|--------------------------|
| No information available | No information available | - | - | No information available | No information available | No information available |
| | | | | | | |
| | | | | | | |

Bioconcentration Factor (BCF)

| Value | Species | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|------|
| No information available | No information available | No information available | No information available | - |
| | | | | |
| | | | | |

Chronic ecotoxicity

| | | | | | |
|---------------|--|----------------------|------------------|----------|---|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: | 4 |

| Value | Dose | Exposure time | Species | Method | Evaluation | Note |
|---|------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Chronic toxicity on fish | LC ₅₀ | No information available | No information available | No information available | No information available | - |
| Chronic toxicity on Crustacea (Daphnia) | EC ₅₀ | No information available | No information available | No information available | No information available | - |

12.4. Mobility in soil

| Known or predicted distribution in environmental compartments: | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|------|
| No information available | | | | | |
| Surface tension: | | | | | |
| | Value | °C | Concentration | Method | Note |
| | No information available | No information available | No information available | No information available | - |
| | | | | | |
| | | | | | |

Adsorption / desorption

| Transport | A/D coefficient Henry's constant | log Kow | Evaporation rate | Method | Note |
|------------|-------------------------------------|--------------------------|--------------------------|--------------------------|------|
| Soil-Water | No information available | No information available | No information available | No information available | - |
| Water-Air | No information available | No information available | No information available | No information available | - |
| Soil-Air | No information available | No information available | No information available | No information available | - |

12.5. Results of PBT and vPvB assessment

| |
|--|
| This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. |
|--|

12.6. Endocrine disrupting properties

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | |
|--|---|
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
|--|---|

| | |
|-------|--------------------------|
| 12.7. | Other adverse effects |
| | No information available |

SECTION 13. Disposal considerations

| | |
|-------|-------------------------|
| 13.1. | Waste treatment methods |
|-------|-------------------------|

| | |
|---------|--|
| 13.1.1. | Product/packaging disposal: |
| | Submit for disposal to the legal person authorized by the Ministry of Environmental and Nature Protection. |

| | |
|---------|---|
| 13.1.2. | Waste codes/waste designations according to law: |
| | 15 01 10*: packaging that contains residual hazardous substances or is contaminated with hazardous substances |

| | |
|---------|---|
| 13.1.3. | Waste treatment – relevant information: |
| | No information available |

| | |
|---------|---|
| 13.1.4. | Sewage disposal – relevant information: |
| | Waste must not be disposed of into the sewage system. |

| | |
|---------|---|
| 13.1.5. | Other disposal recommendations: |
| | Do not dispose of the product's remains into the sewage system. Submit the remains to the collectors authorized by the ministry in charge. Do not dispose of the packaging into the sewage system. Submit the packaging to the collectors authorized by the ministry in charge. |

| | |
|---------|--------------------------------|
| 13.1.6. | Relevant Community provisions: |
| | - |

SECTION 14. Transport information

| | |
|---------------------------|-------------------------------------|
| | Transporting/shipment by road (ADR) |
| UN number | 1170 |
| UN proper shipping name: | Ethanol solution |
| Transport hazard classes: | 3 |
| Packing group: | II |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | |
|---|------------------|
| Environmental hazards: | - |
| Special precautions for user: | - |
| Transporting/shipment by rail (RID) | |
| UN number | 1170 |
| UN proper shipping name: | Ethanol solution |
| Transport hazard classes: | 3 |
| Packing group: | II |
| Environmental hazards: | - |
| Special precautions for user: | - |
| Transporting/shipment by inland waterways (ADN) | |
| UN number | 1170 |
| UN proper shipping name: | Ethanol solution |
| Transport hazard classes: | 3 |
| Packing group: | II |
| Environmental hazards: | - |
| Special precautions for user: | - |
| Transporting/shipment by sea (IMDG) | |
| UN number | 1170 |
| UN proper shipping name: | Ethanol solution |
| Transport hazard classes: | 3 |
| Packing group: | II |
| Environmental hazards: | - |
| Special precautions for user: | - |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: | - |
| Transporting/shipment by air (ICAO-TI/IATA-DGR) | |
| UN number | 1170 |
| UN Proper shipping name: | Ethanol solution |
| Transport hazard classes: | 3 |
| Packing group: | II |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Further information: | |
| No information available | |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | | |
|-------|---|--|
| 15.1. | Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| | EU regulations | |
| | Authorisation and/or restrictions on use | |
| | Authorisations: | - |
| | Restrictions: | - |
| | Other EU regulations: | <p>Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;</p> <p>Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC;</p> <p>Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work;</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;</p> <p>REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII);</p> |
| | Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline): | |
| | National legislation: | <p>Chemicals Act, Regulation on classification, packaging and labeling of dangerous substances, Ordinance on occupational exposure limit values and on biological limit values, Regulation on categories, types and classification of waste with a waste catalog and list of hazardous waste, Transport of Hazardous Substances Act</p> |
| 15.2. | Chemical safety assessment | |
| | None | |

| | | |
|--------------------------------------|------------------------|---|
| SECTION 16. Other information | | |
| 16.1. | Indication of changes: | - |

| | | | | |
|---------------|--|----------------------|------------------|------------|
| Trade name: | 4% FORMALDEHYDE, ALCOHOLIC SOLUTION | | | |
| Product code: | F4A-OT-X** | Date of compilation: | 21 December 2022 | Version: 4 |

| | | |
|----------------|---|---|
| 16.2. | Abbreviations and acronyms: | <p>ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>IATA: International Air Transport Association</p> <p>GHS: Globally Harmonised System of Classification and Labelling of Chemicals</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>CAS: Chemical Abstracts Service (division of the American Chemical Society)</p> <p>DNEL: Derived No-Effect Level (UK REACH)</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>PBT: Persistent, Bioaccumulative and Toxic</p> <p>vPvB: very Persistent and very Bioaccumulative</p> |
| 16.3. | Key literature references and source of data: | - |
| 16.4. | Classification and procedure used to derive the classification for mixture according to Regulation (EC) 1272/2008 (CLP) | |
| Classification | | Classification procedure |
| - | | - |
| 16.5. | Relevant H statements (number and full text) | |
| | H: | <p>225 Highly flammable liquid and vapor.</p> <p>302 Harmful if swallowed.</p> <p>315 Causes skin irritation.</p> <p>317 May cause allergic skin reaction.</p> <p>318 Causes serious eye damage.</p> <p>332 Harmful if inhaled.</p> <p>335 May cause respiratory irritation.</p> <p>341 Suspected of causing genetic defects.</p> <p>350 May cause cancer.</p> |
| 16.6. | Training advice: | - |
| 16.7. | Further notice: | <p>** "X" in the product code marks different volumes (different packaging of the product).</p> <p>We are not responsible for consequences in case of failure to comply with instructions for use or improper use of the product described in this material safety data sheet.</p> |

| |
|---|
| ANNEX: Exposure scenario resulting to Chemical safety assessment |
| - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| SECTION 1: Identification of the substance/mixture and of the company/undertaking | | |
|---|---|---|
| 1.1. | Product identifier | |
| | Trading name: | AMMONIUM IRON SULFATE, SOLUTION |
| | Chemical name: | - |
| | Catalogue number: | ASF-OT-X** |
| 1.2. | Relevant identified uses of the substance or mixture and uses advised against | |
| | Uses: | For use with Reticulin and Reticulin Contrast staining kits. |
| | Uses advised against: | Only the identified uses are advised. |
| | Reason why uses advised against: | The product is intended for use only as an <i>in vitro</i> diagnostic medical device, registered at the Agency for Medicinal Products and Medical Devices and there is no reason to use it for other purposes |
| 1.3. | Details of the supplier of the safety data sheet | |
| | Supplier: | BioGnost Ltd. |
| | Address: | Medjugorska 59, Zagreb |
| | Telephone number: | +385 1 2409997 |
| | Fax no.: | +385 1 2404039 |
| | e-mail of competent person: | msds@biognost.hr |
| | National contact: | - |
| 1.4. | Emergency telephone number | |
| | National Protection and Rescue Directorate: | 112 |
| | Medical information: | +385 1 2348 342 |
| | Other information: | - |

| SECTION 2. Hazards identification | | |
|--|--|---------------------------------|
| 2.1. | Classification of the substance or mixture | |
| 2.1.1. | Classification according to Regulation (EC) No 1272/2008 (CLP) | |
| | Hazard class and category code: | Hazard statements*: |
| | Not identified as hazardous substance. | - |
| 2.1.2. | Additional information | |
| | - | |
| *For full text of Hazard- and EU Hazard-statements: see Section 16 | | |
| 2.2. | Label elements | |
| | Product identification: | AMMONIUM IRON SULFATE, SOLUTION |
| | Identification number: | - |
| | Authorization no.: | - |
| | Hazard pictograms: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | | |
|------|--|---|
| | Signal word: | - |
| | Hazard statements: | - |
| | Precautionary statements: | - |
| | Further information: | - |
| 2.3. | Other hazards | |
| | Endocrine Disrupting Properties: No known endocrine disrupting properties Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. | |

| SECTION 3. Composition/information on ingredients | | | | |
|---|--------------------------|--------------------------------|----------------------------------|--|
| CAS/ EC/ Index no. | REACH Registration No | Weight % content (or range) | Identification name | Classification according to Regulation (EC) No 1272/2008 (CLP) |
| - | - | - | Contains no hazardous substances | - |

| SECTION 4. First aid measures | | |
|-------------------------------|--|--------------------------|
| 4.1. | Description of first aid measures | |
| | General notes: | - |
| | Following inhalation: | No information available |
| | Following skin contact: | No information available |
| | Following eye contact: | No information available |
| | Following ingestion: | No information available |
| | Self-protection of the first aider: | Treat symptomatically. |
| 4.2. | Most important symptoms and effects, both acute and delayed | |
| | Following inhalation: | No information available |
| | Following skin contact: | No information available |
| | Following eye contact: | No information available |
| | Following ingestion: | No information available |
| 4.3. | Indication of any immediate medical attention and special treatment needed | |
| | - | |

| SECTION 5 Firefighting measures | | |
|---------------------------------|-------------------------------|---|
| 5.1. | Extinguishing media | |
| | Suitable extinguishing media: | Small fire - water spray, dry powder, CO ₂ Large fire - water spray or alcohol-resistant foam |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | | |
|------|--|--------------------------|
| | Unsuitable extinguishing media: | water jet |
| 5.2. | Special hazards arising from the substance or mixture | |
| | Hazardous combustion products: | No information available |
| 5.3. | Advice for firefighters | |
| | Use a self-contained open-circuit compressed air breathing apparatus and fireproof clothing. Cool closed containers exposed to fire with water spray or vapor. | |
| 5.4. | Additional information | |
| | Remove sources of heat and ignition. Do not contaminate the environment with extinguishing media. | |

| | | |
|---|---|---|
| SECTION 6. Accidental release measures | | |
| 6.1. | Personal precautions, protective equipment and emergency procedures | |
| 6.1.1. | For non-emergency personnel | |
| | Protective equipment: | Use personal protective equipment (see Section 8). |
| | Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Remove all sources of sparks and ignition. Do not smoke. |
| | Emergency procedures: | Mark the area using proper signs. |
| 6.1.2. | For emergency responders: | |
| | Wear protective equipment (see Section 8). | |
| 6.2. | Environmental precautions: | |
| | Do not dispose of in sewage, drainage system and waterways. In case of large spillage contact National Protection and Rescue Directorate (NPRD) on 112. | |
| 6.3. | Methods and material for containment and cleaning up | |
| 6.3.1. | Bunding, covering of drains; capping procedures: | Sand or clay barriers. |
| 6.3.2. | Cleaning up: | Where possible, the substance can be absorbed by using inflammable material (sand, diatomaceous earth, vermiculite). Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water. |
| 6.3.3. | Other information: | - |
| 6.4. | Reference to other sections | |
| | See Section 7 for information about secure handling. See Section 8 for information about personal protective equipment. See Section 13 for information about containment. | |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| SECTION 7. Handling and storage | | |
|---------------------------------|--|---|
| 7.1. | Precautions for safe handling | |
| 7.1.1. | Protection measures | |
| | Measures to prevent fire: | Keep away from sources of heat and ignition. Do not smoke. |
| | Measures to prevent aerosol and dust generation: | Secure proper ventilation. |
| | Measures to protect the environment: Other measures: | Prevent spilling into the sewage system and waterways. - |
| 7.1.2. | Advice on general occupational hygiene: | |
| | Do not eat, drink or smoke in the workspace. Thoroughly wash hands after work and before eating. | |
| 7.2. | Conditions for safe storage, including any incompatibilities | |
| | Technical measures and storage conditions: | Keep in tightly closed and upright set containers in a well ventilated storage rooms, and away from sources of heat, sunlight, and other incompatible substances. |
| | Packaging materials: | Manufacturer's original packaging. |
| | Requirements for storage rooms and vessels: | Keep away from food and drink. Keep the containers tightly closed. |
| | Advices for storage equipment: | The storage must be made of hard material; floors must be resistant to chemicals. There must be no drain that directly leads into sewage system. Secure proper ventilation. |
| | Further information on storage conditions: | Do not place the unused material in the storage room and do not use empty containers for storing other chemicals. Do not store with incompatible materials (see Section 9). |
| 7.3. | Specific end use(s) | |
| | Recommendations: | - |
| | Industrial sector specific solutions: | - |

| SECTION 8. Exposure controls/personal protection | | | | |
|---|--------------------|--|-------------------|--------------------------|
| 8.1. | Control parameters | | | |
| Substance | CAS No | Occupational exposure limit values/short term values | | Biological limit values |
| | | ppm | mg/m ³ | |
| - | - | - | - | No information available |
| | | | | |
| Substance name: | - | | | |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | | | |
|--------|---|---------|---|
| EC No: | - | CAS No: | - |
|--------|---|---------|---|

DNEL

Industrial

| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
|--------------------|--------------------|-----------------------|----------------------|-------------------------|
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |

Critical physical parameters: solubility, flammability, corrosivity: -

Consumer

| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
|--------------------|--------------------|-----------------------|----------------------|-------------------------|
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |

PNEC

| Environmental protection target | PNEC |
|------------------------------------|--------------------------|
| Fresh water | No information available |
| Freshwater sediments | No information available |
| Marine water | No information available |
| Marine sediments | No information available |
| Food chain | No information available |
| Microorganisms in sewage treatment | No information available |
| Soil (agricultural) | No information available |
| Air | No information available |

8.2. Exposure controls

8.2.1. Appropriate engineering controls

| | |
|--|---|
| Substance/mixture related measures to prevent exposure during identified uses: | Use the product in well ventilated rooms. Use personal protective equipment. Do not eat, drink or smoke in the workspace. |
| Structural measures to prevent exposure: | No information available |
| Organisational measures to prevent exposure: | Organization of work in order to reduce other worker's influence during work process. |
| Technical measures to prevent exposure: | Secure proper workspace ventilation in order to keep concentration levels in air below permitted levels. |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | | |
|----------|---|--|
| 8.2.2. | Personal protection equipment | |
| 8.2.2.1. | Eye and face protection: | Safety glasses that stick to face (preventing splashing) (EN 166) or visor. |
| 8.2.2.2. | Skin protection | |
| | Hand protection: | Protective gloves must be according to the EU Directive 2016/425/EEC and standard EN 374. Glove material: nitrile rubber Glove thickness: ≥0.50 mm Break through time: >480 min |
| | Other skin protection: | Wear antistatic clothing made of natural fibers (such as cotton) with long sleeves (EN 13034), and shoes that cover the entire foot (EN 10335). |
| 8.2.2.3. | Respiratory protection: | Protective full face mask (EN 136) or half mask (EN 140) equipped with a filter for organic vapors, type "A" (boiling point >65°C) according to EN 14387) used when concentration levels exceed GVI. |
| 8.2.2.4. | Thermal hazards: | No information available |
| 8.2.3. | Environmental exposure controls | |
| | Substance/mixture related measures to prevent exposure: | See Section 6 |
| | Structural measures to prevent exposure: | Use modern equipment. |
| | Organisational measures to prevent exposure: | Adapt the work process to the required working conditions of the workplace. |
| | Technical measures to prevent exposure: | See Section 6 |

| SECTION 9. Physical and chemical properties | | | |
|---|---|----------------------------------|--------------------------|
| 9.1. | Information on basic physical and chemical properties | | |
| | | Value | Method |
| | Physical state: | liquid | No information available |
| | Colour: | light brown | No information available |
| | Odour/odour threshold: | no odor/no information available | No information available |
| | Melting point / freezing point: | No information available | No information available |
| | Boiling point or initial boiling point and boiling range: | No information available | No information available |
| | Flammability: | No information available | No information available |
| | Lower and upper explosion limit: | No information available | No information available |
| | Flash point: | No information available | No information available |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 5 |

| | | | |
|------|--|--------------------------|--------------------------|
| | Auto-ignition temperature: | No information available | No information available |
| | Decomposition temperature: | No information available | No information available |
| | pH: | No information available | No information available |
| | Kinematic viscosity: | No information available | No information available |
| | Solubility: | No information available | No information available |
| | Partition coefficient n-octanol/water (log value): | No information available | No information available |
| | Vapour pressure: | No information available | No information available |
| | Density and/or relative density: | No information available | No information available |
| | Relative vapour density: | No information available | No information available |
| | Particle characteristics: | No information available | No information available |
| 9.2. | Other information | | |
| | - | | |

| SECTION 10. Stability and reactivity | | |
|--------------------------------------|-------------------------------------|--|
| 10.1. | Reactivity: | See subsections 10.3 through 10.5. |
| 10.2. | Chemical stability: | The product is chemically stable under standard ambient conditions of storing and using. |
| 10.3. | Possibility of hazardous reactions: | No information available. |
| 10.4. | Conditions to avoid: | No information available. |
| 10.5. | Incompatible materials: | No information available. |
| 10.6. | Hazardous decomposition products: | No information available. |

| SECTION 11. Toxicological information | | | | | |
|---------------------------------------|---|---------|---|---------------|---------|
| 11.1. | Information on toxicological effects | | | | |
| | Acute toxicity: | | | | |
| Route of exposure: | Method | Species | Effective dose LD ₅₀ /LC ₅₀ or ATE _{mixture} | Exposure time | Results |
| Oral exposure: | No information available | - | LD ₅₀ | - | - |
| Dermal exposure: | No information available | - | LD ₅₀ | - | - |
| Inhalation exposure: | No information available | - | LC ₅₀ | - | - |
| | | | | | |
| | Specific target organ toxicity – single exposure (STOT SE): | | | | |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 5 |

| | | | | | | |
|----------------------|--|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | Specific effects | | Target organ | | Note | |
| Oral exposure: | No information available | | No information available | | - | |
| Dermal exposure: | No information available | | No information available | | - | |
| Inhalation exposure: | No information available | | No information available | | - | |
| | | | | | | |
| | Respiratory irritation: | | No information available | | | |
| | | | | | | |
| | Irritation and corrosion | | | | | |
| | Exposure time | Species | Evaluation | Method | Note | |
| Skin irritation: | - | - | - | - | - | |
| Eye irritation: | - | - | - | - | - | |
| | | | | | | |
| | Sensitization | | | | | |
| Dermal exposure: | No information available | | | | | |
| Inhalation exposure: | No information available | | | | | |
| | | | | | | |
| | Symptoms related to the physical, chemical and toxicological characteristics | | | | | |
| Oral exposure: | No information available | | | | | |
| Dermal exposure: | No information available | | | | | |
| Inhalation exposure: | No information available | | | | | |
| Eye exposure: | No information available | | | | | |
| | | | | | | |
| | Repeated dose toxicity (subacute, subchronic, chronic) | | | | | |
| | Dose | Exposure time | Species | Method | Evaluation | Note |
| Subacute oral | No information available | No information available | No information available | No information available | No information available | - |
| Subacute dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | No information available | No information available | No information available | - |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 5 |

| | | | | | | |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| Subchronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Chronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Chronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | No information available | No information available | No information available | - |

| |
|---|
| Specific target organ toxicity – repeated exposure (STOT RE): |
|---|

| | Specific effects | Target organ | Note |
|-----------------------|--------------------------|--------------------------|------|
| Subacute oral | No information available | No information available | - |
| Subacute dermal | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | - |
| Subchronic oral | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | - |
| Chronic oral | No information available | No information available | - |
| Chronic dermal | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | - |

| |
|--|
| CMR effects (carcinogenicity, mutagenicity, reproductive toxicity) |
|--|

| | |
|--------------------------------|--------------------------|
| Carcinogenicity: | No information available |
| Mutagenicity <i>in-vitro</i> : | No information available |
| Genotoxicity: | No information available |
| Mutagenicity <i>in-vivo</i> : | No information available |
| Germ cell mutagenicity: | No information available |
| Reproductive toxicity: | No information available |

| | | | | | | |
|---------------|--|----------------------|-------------|----------|---|--|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 5 | |

| | | |
|--|---|---|
| Summary of evaluation of the CMR properties: | | - |
| | | |
| 11.2 | Information on other hazards: | |
| 11.2.1. | Endocrine disrupting properties: | |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. | - |
| 11.2.2. | Other informations: | |
| | - | |

| SECTION 12. Ecological information | | | | | | |
|------------------------------------|------------------|---------------|--------------------------|--------------------------|------------|------|
| 12.1. | Toxicity | | | | | |
| Acute toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | No information available | No information available | - | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | - | - |
| Algae/aquatic plants | IC ₅₀ | 8 days | No information available | No information available | - | - |
| Microorganisms | LC ₅₀ | 72 hours | - | - | - | - |
| Chronic toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | No information available | No information available | - | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | - | - |
| Algae/aquatic plants | IC ₅₀ | 72 hours | No information available | No information available | - | - |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 5 |

| | | | | | |
|-----------------|---|---|---|---|---|
| Other organisms | - | - | - | - | - |
|-----------------|---|---|---|---|---|

12.2. Persistence and degradability

Abiotic degradation

| | Degradation half-lives | Method | Evaluation | Note |
|--------------|--------------------------|--------------------------|--------------------------|------|
| Marine water | No information available | No information available | No information available | - |
| Fresh water | No information available | No information available | No information available | - |
| Air | No information available | No information available | No information available | - |
| Soil | No information available | No information available | No information available | - |

Biodegradation

| % Degradation | Time (days) | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

12.3. Bioaccumulative potential

Partition coefficient: n-octanol/water (log Kow):

| Value | Concentration | pH | °C | Method | Evaluation | Note |
|-------|--------------------------|----|----|--------------------------|--------------------------|------|
| - | No information available | - | - | No information available | No information available | - |
| | | | | | | |
| | | | | | | |

Bioconcentration factor (BCF)

| Value | Species | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

Chronic ecotoxicity

| Value | Dose | Exposure time | Species | Method | Evaluation | Note |
|--------------------------|------------------|---------------|---------|--------|----------------|------|
| Chronic toxicity on fish | LC ₅₀ | No | No | No | No information | - |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 5 |

| | | | | | | |
|--|------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| | | information available | information available | information available | available | |
| Chronic toxicity on crustacea (<i>Daphnia</i>) | EC ₅₀ | No information available | No information available | No information available | No information available | - |

12.4. Mobility in soil

| | | | | | |
|--|--|--------------------------|--------------------------|--------------------------|------|
| | Known or predicted distribution in environmental compartments: | | | | |
| | No information available | | | | |
| | Surface tension: | | | | |
| | Value | °C | Concentration | Method | Note |
| | No information available | No information available | No information available | No information available | - |
| | | | | | |
| | | | | | |

Adsorption / desorption

| | | | | | |
|------------|-------------------------------------|--------------------------|--------------------------|--------------------------|------|
| Transport | A/D coefficient Henry's constant | log Kow | Evaporation rate | Method | Note |
| Soil-water | No information available | No information available | No information available | No information available | - |
| Water-air | No information available | No information available | No information available | No information available | - |
| Soil-air | No information available | No information available | No information available | No information available | - |

12.5. Results of PBT and vPvB assessment

| | |
|--|---|
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
|--|---|

12.6. Endocrine disrupting properties

| | |
|--|---|
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
|--|---|

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | |
|--|---|
| 12.7. | Other adverse effects |
| | No information available |
| SECTION 13. Disposal considerations | |
| 13.1. | Waste treatment methods |
| 13.1.1. | Product/Packaging disposal: |
| | Submit for disposal to the legal person authorized by the Ministry of Environmental and Nature Protection. |
| 13.1.2. | Waste codes/waste designations according to Law: |
| | No information available |
| 13.1.3. | Waste treatment – relevant information: |
| | No information available |
| 13.1.4. | Sewage disposal – relevant information: |
| | Waste must not be disposed of into the sewage system. |
| 13.1.5. | Other disposal recommendations: |
| | Do not dispose of the product's remains into the sewage system. Submit the remains to the collectors authorized by the ministry in charge. Do not dispose of the packaging into the sewage system. Submit the packaging to the collectors authorized by the ministry in charge. Do not dispose of in places where ignition may occur. |
| 13.1.6. | Relevant Community provisions: |
| | - |
| SECTION 14. Transport information | |
| | Transporting/shipment by road (ADR) |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | |
|---|---------------------------------------|
| Transporting/shipment by rail (RID) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Inland waterway transport (ADN) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by sea (IMDG) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by air (ICAO-TI/IATA-DGR) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Further information: | |
| - | |

| SECTION 15. Regulatory information | |
|------------------------------------|--|
| 15.1. | Safety, health and environmental regulations/legislation specific for the substance or mixture |
| | EU regulations |
| | Authorization and/or restrictions of use |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | | |
|-------|--|--|
| | Authorizations: | - |
| | Restrictions: | - |
| | Other EU regulations: | <p>Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;</p> <p>Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC;</p> <p>Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work;</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;</p> <p>REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII);</p> |
| | Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline) | |
| | National legislation: | <p>Chemicals Act, Regulation on classification, packaging and labeling of dangerous substances, Ordinance on occupational exposure limit values and on biological limit values, Regulation on categories, types and classification of waste with a waste catalog and list of hazardous waste, Ordinance on writing Material safety data sheet, Transport of Hazardous Substances Act</p> |
| 15.2. | Chemical safety assessment | |
| | None | |

| SECTION 16. Other information | | |
|--------------------------------------|------------------------|---|
| 16.1. | Indication of changes: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | AMMONIUM IRON SULFATE, SOLUTION | | | |
| Product code: | ASF-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 5 |

| | | |
|----------------|---|---|
| 16.2. | Abbreviations and acronyms: | <p>ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>IATA: International Air Transport Association</p> <p>GHS: Globally Harmonised System of Classification and Labelling of Chemicals</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>CAS: Chemical Abstracts Service (division of the American Chemical Society)</p> <p>DNEL: Derived No-Effect Level (UK REACH)</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>PBT: Persistent, Bioaccumulative and Toxic</p> <p>vPvB: very Persistent and very Bioaccumulative</p> |
| 16.3. | Key literature references and source of data: | - |
| 16.4. | Classification and procedure used to derive the classification for mixture according to Regulation (EC) 1272/2008 (CLP) | |
| Classification | | Classification procedure |
| - | | - |
| 16.5. | Relevant H statements (number and full text) | |
| | H: - | - |
| 16.6. | Training advice: | - |
| 16.7. | Further information: | <p>** "X" in the product code marks different volumes (different packagings of the product)</p> <p>We are not responsible for consequences in case of failure to comply with instructions for use or improper use of the product described in this material safety data sheet.</p> |

| |
|--|
| ANNEX: |
| Exposure scenario resulting to Chemical safety assessment |
| - |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| SECTION 1: Identification of the substance/mixture and of the company/undertaking | | |
|---|---|--|
| 1.1 | Product identifier | |
| | Trading name: | OXALIC ACID, 1% SOLUTION |
| | Chemical name: | - |
| | Catalogue number: | OKS1-OT-X** |
| 1.2 | Relevant identified uses of the substance or mixture and uses advised against | |
| | Uses: | For use with special staining kits. |
| | Uses advised against: | Only the identified uses are advised. |
| | Reason why uses advised against: | The product is intended for use only as an <i>in vitro</i> diagnostic medical device, registered at the Agency for Medicinal Products and Medical Devices and there is no reason to use it for other purposes. |
| 1.3 | Details of the supplier of the safety data sheet | |
| | Supplier: | BioGnost Ltd. |
| | Address: | Medjugorska 59, Zagreb |
| | Telephone number: | +385 1 2409997 |
| | Telefax.: | +385 1 2404039 |
| | e-mail of competent person: | msds@biognost.hr |
| | National contact: | - |
| 1.4 | Emergency telephone number | |
| | National Protection and Rescue Directorate: | 112 |
| | Medical information: | +385 1 2348 342 |
| | Other information: | - |

| SECTION 2. Hazards identification | | |
|--|--|--------------------------|
| 2.1 | Classification of the substance or mixture | |
| 2.1.1 | Classification according to Regulation (EC) No 1272/2008 (CLP) | |
| | Hazard class and category code: | Hazard statements*: |
| | Not identified as hazardous substance. | - |
| 2.1.2. | Additional information | |
| | - | |
| *For full text of Hazard- and EU Hazard-statements: see SECTION 16 | | |
| 2.2 | Label elements | |
| | Product identification: | OXALIC ACID, 1% SOLUTION |
| | Identification number: | - |
| | Authorization number: | - |
| | Hazard pictograms: | - |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|---------------------------------------|---|
| Signal word: | - |
| Hazard statements: | - |
| Precautionary statements: | - |
| Supplemental hazard information (EU): | - |

| | |
|-----|--|
| 2.3 | Other hazards |
| | Endocrine Disrupting Properties: No known endocrine disrupting properties Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. |

SECTION 3. Composition/information on ingredients

| CAS/ EC/ Index number | REACH Registration No | Weight % content (or range) | Identification name | Classification according to Regulation (EC) No 1272/2008 (CLP) |
|-----------------------------|-----------------------------|-----------------------------------|----------------------------------|---|
| - | - | - | Contains no hazardous substances | - |

SECTION 4. First aid measures

| | | |
|-----|--|--|
| 4.1 | Description of first aid measures | |
| | General notes: | If the suggested first aid measures do not prove sufficient, seek medical attention. |
| | Following inhalation: | Carry the afflicted person out of the contaminated area into a well-ventilated area or out for fresh air. In case of difficult breathing, provide the afflicted person with oxygen. |
| | Following skin contact: | Remove contaminated clothing. Immediately wash with plenty of water for at least 20 minutes. Seek medical assistance if the symptoms of irritation remain. |
| | Following eye contact: | Rinse out with plenty of water with the eyelid held wide open for at least 20 minutes. If the symptoms remain, immediately call in ophthalmologist. |
| | Following ingestion: | Rinse the mouth thoroughly with 1-2 glasses of water. Immediately consult a physician and show the container or label. In case of swallowing large quantities, transport the afflicted person to the hospital. |
| | Self-protection of the first aider: | - |
| 4.2 | Most important symptoms and effects, both acute and delayed | |
| | Following inhalation: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|-----|--|--|
| | Following skin contact: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| | Following eye contact: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| | Following ingestion: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| 4.3 | Indication of any immediate medical attention and special treatment needed | |
| | - | |

| SECTION 5. Firefighting measures | | |
|----------------------------------|---|--|
| 5.1 | Extinguishing media | |
| | Suitable extinguishing media: | water spray, dry powder, CO ₂ or alcohol resistant foam |
| | Unsuitable extinguishing media: | Water with full jet |
| 5.2 | Special hazards arising from the substance or mixture | |
| | Hazardous combustion products: | no information available |
| 5.3 | Advice for firefighters | |
| | Use a self-contained open-circuit compressed air breathing apparatus and fireproof clothing. | |
| 5.4 | Additional information | |
| | Cool endangered receptacles with water spray. Collect contaminated fire fighting water separately. Do not contaminate the environment with extinguishing media. | |

| SECTION 6. Accidental release measures | | |
|--|---|---|
| 6.1 | Personal precautions, protective equipment and emergency procedures | |
| 6.1.1. | For non-emergency personnel | |
| | Protective equipment: | Use personal protective equipment (see Section 8). |
| | Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Avoid breathing vapors and avoid contact with skin and eyes. Do not smoke. Keep away from ignition sources. |
| | Emergency procedures: | Mark the area using proper signs. |
| 6.1.2. | For emergency responders: | |
| | Use protective equipment; in case of inadequate ventilation use adequate airways protective equipment (see Section 8). | |
| 6.2 | Environmental precautions: | |
| | Do not dispose of in sewage, drainage system and waterways. In case of large spillage contact National Protection and Rescue Directorate (NPRD) on 112. | |
| 6.3 | Methods and material for containment and cleaning up | |
| 6.3.1. | Bunding, covering of drains; capping procedures: | Sand protective barrier or barriers made of similar materials. |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|--------|--|---|
| 6.3.2. | Cleaning up: | Where possible, the substance can be absorbed by using absorbing material. Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and and involved materials with water. |
| 6.3.3. | Other information: | Secure proper ventilation. Do not use incompatible materials (see Section 10). |
| 6.4 | Reference to other sections | |
| | See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information. | |

| SECTION 7. Handling and storage | | |
|---------------------------------|--|---|
| 7.1 | Precautions for safe handling | |
| 7.1.1. | Protection measures | |
| | Measures to prevent fire: | Use in well ventilated storage rooms. Keep away from sources of ignition and heat. Do not use tools that cause sparks. Do not smoke. |
| | Measures to prevent aerosol and dust generation: | Secure proper ventilation. |
| | Measures to protect the environment: | Prevent spilling into the sewage system and waterways. |
| | Other measures: | Protect against electrostatic charges. |
| 7.1.2. | Advice on general occupational hygiene: | |
| | Do not eat, drink or smoke in the workspace. Thoroughly wash hands after work and before eating. | |
| 7.2 | Conditions for safe storage, including any incompatibilities | |
| | Technical measures and storage conditions: | Keep in tightly closed and upright set containers in a well ventilated storage rooms at temperatures ranging from 15 to 25 °C. Protect from heat and direct sunlight. |
| | Packaging materials: | Manufacturer's original packaging. |
| | Requirements for storage rooms and vessels: | Keep away from food and drink. Keep the containers tightly closed. |
| | Advices for storage equipment: | The storage must be made of hard material; floors must be resistant to chemicals. There must be no drain that directly leads into sewage system. Secure proper ventilation. |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|-----|--|--|
| | Further information on storage conditions: | Do not place the unused material in the storage room and do not use empty containers for storing other chemicals. Do not store with incompatible materials (see Section 10). |
| 7.3 | Specific end use(s) | |
| | Recommendations: | - |
| | Industrial sector specific solutions: | - |

| SECTION 8. Exposure controls/personal protection | | | | |
|--|--------------------|--|----------------------|-------------------------|
| 8.1 | Control parameters | | | |
| Substance | CAS No | Occupational exposure limit values/short term values | | Biological limit values |
| | | ppm | mg/m³ | |
| - | - | - | - | - |
| | | | | |
| Substance name: | | - | | |
| EC No: | | - | CAS No: | - |
| DNEL | | | | |
| Industrial | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |
| Critical physical parameters: solubility, flammability, corrosivity: | | | - | |
| Consumer | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |
| PNEC | | | | |
| Environmental protection target | | PNEC | | |
| Fresh water | | no information available | | |
| Freshwater sediments | | no information available | | |
| Marine water | | no information available | | |
| Marine sediments | | no information available | | |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|------------------------------------|--------------------------|
| Food chain | no information available |
| Microorganisms in sewage treatment | no information available |
| Soil (agricultural) | no information available |
| Air | no information available |

| | |
|-----|-------------------|
| 8.2 | Exposure controls |
|-----|-------------------|

| | |
|--------|----------------------------------|
| 8.2.1. | Appropriate engineering controls |
|--------|----------------------------------|

| | | |
|--|--|--|
| | Substance/mixture related measures to prevent exposure during identified uses: | Use the product in well ventilated rooms. Use personal protective equipment. Do not eat, drink or smoke in the workspace. |
| | Structural measures to prevent exposure: | In accordance with Section 7. |
| | Organisational measures to prevent exposure: | Organization of work in order to reduce other worker's influence during work process. |
| | Technical measures to prevent exposure: | Secure proper workspace ventilation in order to keep concentration levels in air below permitted levels. Secure stations for rinsing eyes and showering. |

| | |
|--------|-------------------------------|
| 8.2.2. | Personal protection equipment |
|--------|-------------------------------|

| | | |
|----------|--------------------------|--|
| 8.2.2.1. | Eye and face protection: | Safety glasses that stick to face (EN 166) or visor in case of lower levels of concentration in air; protective gas mask that covers the entire face in case of higher levels of concentration in air. |
|----------|--------------------------|--|

| | |
|----------|-----------------|
| 8.2.2.2. | Skin protection |
|----------|-----------------|

| | | |
|--|------------------|---|
| | Hand protection: | The protective gloves have to satisfy the specification of Regulation (EU) 2016/425 and the related standard EN 374. Glove material: nitrile rubber Glove thickness: 0.40 mm Time until perforation: > 480 min |
|--|------------------|---|

| | | |
|--|------------------------|---|
| | Other skin protection: | During everyday work use cotton clothing (EN 340) and suitable footwear, such as rubber boots (EN 20345) or shoes that cover the entire foot. In case of spilling hazard, use clothing made of impermeable material suitable for protection from liquid chemicals (Viton, PVC, himex) and footwear made from the same material. |
|--|------------------------|---|

| | | |
|----------|-------------------------|--|
| 8.2.2.3. | Respiratory protection: | Protective full face mask (EN 136) or half mask (EN 140) equipped with a filter for organic vapors, type "A" (boiling point >65°C) according to EN 14387) used when concentration levels exceed GVI. |
|----------|-------------------------|--|

| | | |
|----------|------------------|--------------------------|
| 8.2.2.4. | Thermal hazards: | No information available |
|----------|------------------|--------------------------|

| | |
|--------|---------------------------------|
| 8.2.3. | Environmental exposure controls |
|--------|---------------------------------|

| | | |
|--|---|---------------|
| | Substance/mixture related measures to prevent exposure: | See Section 6 |
|--|---|---------------|

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|--|---|
| Structural measures to prevent exposure: | Use modern equipment. |
| Organisational measures to prevent exposure: | Adapt the work process to the required working conditions of the workplace. |
| Technical measures to prevent exposure: | See Section 6 |

| SECTION 9. Physical and chemical properties | | | |
|---|---|---|--------------------------|
| 9.1 | Information on basic physical and chemical properties | | |
| | | Value | Method |
| | Physical state: | liquid | No information available |
| | Colour: | purple brown | No information available |
| | Odour/odour threshold: | characteristic/no information available | No information available |
| | Melting point / freezing point: | No information available | No information available |
| | Boiling point or initial boiling point and boiling range: | No information available | No information available |
| | Flammability: | No information available | No information available |
| | Lower and upper explosion limit: | No information available | No information available |
| | Flash point: | No information available | No information available |
| | Auto-ignition temperature: | No information available | No information available |
| | Decomposition temperature: | No information available | No information available |
| | pH: | No information available | No information available |
| | Kinematic viscosity: | No information available | No information available |
| | Solubility: | No information available | No information available |
| | Partition coefficient n-octanol/water (log value): | No information available | No information available |
| | Vapour pressure: | No information available | No information available |
| | Density and/or relative density: | No information available | No information available |
| | Relative vapour density: | No information available | No information available |
| | Particle characteristics: | No information available | No information available |
| 9.2 | Other information | | |
| | - | | |

| SECTION 10. Stability and reactivity | | |
|--------------------------------------|-------------|------------------------------------|
| 10.1 | Reactivity: | See subsections 10.3 through 10.5. |

| | | | | | |
|---------------|---------------------------------|----------------------|-------------|----------|---|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | | |
|------|-------------------------------------|---|
| 10.2 | Chemical stability: | The product is chemically stable under standard ambient conditions of storing and using (room temperature). |
| 10.3 | Possibility of hazardous reactions: | No information available |
| 10.4 | Conditions to avoid: | No information available |
| 10.5 | Incompatible materials: | No information available |
| 10.6 | Hazardous decomposition products: | No information available |

| SECTION 11. Toxicological information | | | | | |
|---------------------------------------|--|---------------------------|--|---------------|---------|
| 11.1 | Information on hazard classes as defined in Regulation (EC) No 1272/2008 | | | | |
| | Acute toxicity: | | | | |
| Route of exposure: | Method | Species | Effective Dose LD ₅₀ /LC ₅₀ or ATE _{mixture} | Exposure time | Results |
| Oral: | No information available | - | No information available | - | - |
| Dermal: | No information available | - | No information available | - | - |
| Inhalation: | No information available | - | No information available | - | - |
| | | | | | |
| | Specific target organ toxicity – single exposure (STOT SE): | | | | |
| | Specific effects | | Target organ | | Note |
| Oral: | No information available | | No information available | | - |
| Dermal: | No information available | | No information available | | - |
| Inhalation: | No information available | | No information available | | - |
| | | | | | |
| | Aspiration hazard: | | No information available. | | |
| | | | | | |
| | Irritation and corrosion | | | | |
| Exposure time | | Species | Evaluation | Method | Note |
| Skin corrosion/irritation: | - | - | - | - | - |
| Serious eye damage/irritation | - | - | - | - | - |
| | | | | | |
| | Sensitization | | | | |
| Skin sensitization: | | No information available. | | | |
| Respiratory sensitization: | | No information available. | | | |

| | | | | | |
|---------------|---------------------------------|----------------------|-------------|----------|---|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | | | | | | |
|--|--------------------------|---------------------------|--------------------------|--------------------------|--------------------------|------|
| | | | | | | |
| Symptoms related to the physical, chemical and toxicological characteristics | | | | | | |
| Oral exposure: | | No information available. | | | | |
| Dermal exposure: | | No information available. | | | | |
| Inhalation exposure: | | No information available. | | | | |
| Eye exposure: | | No information available. | | | | |
| | | | | | | |
| Repeated dose toxicity (subacute, subchronic, chronic) | | | | | | |
| | Dose | Exposure time | Species | Method | Evaluation | Note |
| Subacute oral | No information available | No information available | No information available | No information available | No information available | - |
| Subacute dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Chronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Chronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| | | | | | | |
| Specific target organ toxicity – repeated exposure (STOT RE): | | | | | | |
| | Specific effects | | | Target organ | | Note |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | | |
|-----------------------|--------------------------|--------------------------|---|
| Subacute oral | No information available | No information available | - |
| Subacute dermal | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | - |
| Subchronic oral | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | - |
| Chronic oral | No information available | No information available | - |
| Chronic dermal | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | - |

| | | | |
|--|--|---|--|
| CMR effects (carcinogenicity; mutagenicity; reproductive toxicity) | | | |
| | Carcinogenicity: | Based on available data, the classification criteria are not met. | |
| | Mutagenicity <i>in vitro</i> : | Based on available data, the classification criteria are not met. | |
| | Genotoxicity: | Based on available data, the classification criteria are not met. | |
| | Mutagenicity <i>in vivo</i> : | Based on available data, the classification criteria are not met. | |
| | Germ cell mutagenicity: | Based on available data, the classification criteria are not met. | |
| | Reproductive toxicity: | Based on available data, the classification criteria are not met. | |
| | Summary of evaluation of the CMR properties: | Based on available data, the classification criteria are not met. | |

| | |
|---------|---|
| 11.2 | Information on other hazards: |
| 11.2.1. | Endocrine disrupting properties: |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
| 11.2.2. | Other informations: |
| | - |

| | | | | | | |
|---|----------|---------------|---------|--------|------------|------|
| SECTION 12. Ecological information | | | | | | |
| 12.1 | Toxicity | | | | | |
| Acute (short-term) toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |

| | | | | | |
|---------------|---------------------------------|----------------------|-------------|----------|---|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | | | | | | |
|----------------------|------------------|----------|--------------------------|--------------------------|--------------------------|---|
| Fish | LC ₅₀ | 96 hours | No information available | No information available | No information available | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | No information available | - |
| Algae/aquatic plants | IC ₅₀ | 4 days | No information available | No information available | No information available | - |
| Other organisms | - | - | - | - | - | - |

| Chronic (long-term) toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
|------------------------------|------------------|---------------|--------------------------|--------------------------|--------------------------|------|
| Fish | LC ₅₀ | 96 hours | No information available | No information available | No information available | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | No information available | - |
| Algae/aquatic plants | IC ₅₀ | 72 hours | No information available | No information available | No information available | - |
| Other organisms | - | - | - | - | - | - |

| | |
|------|-------------------------------|
| 12.2 | Persistence and degradability |
|------|-------------------------------|

| | |
|--|---------------------|
| | Abiotic degradation |
|--|---------------------|

| | Degradation half-lives | Method | Evaluation | Note |
|--------------|--------------------------|--------------------------|--------------------------|------|
| Marine water | No information available | No information available | No information available | - |
| Fresh water | No information available | No information available | No information available | - |
| Air | No information available | No information available | No information available | - |
| Soil | No information available | No information available | No information available | - |

| | |
|--|----------------|
| | Biodegradation |
|--|----------------|

| % Degradation | Time (days) | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |

| | | | | | |
|---------------|---------------------------------|----------------------|-------------|----------|---|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | | | | | | |
|--|--|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | | | | | | |
| | | | | | | |
| 12.3 | Bioaccumulative potential | | | | | |
| | Octanol-water partition coefficient (log Kow) | | | | | |
| Value | Concentration | pH | °C | Method | Evaluation | Note |
| - | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | Bioconcentration factor (BCF) | | | | | |
| Value | Species | | Method | Evaluation | Note | |
| No information available | No information available | information | No information available | No information available | - | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | Chronic ecotoxicity | | | | | |
| Value | Dose | Exposure time | Species | Method | Evaluation | Note |
| Chronic toxicity on fish | LC ₅₀ | No information available | No information available | No information available | No information available | - |
| Chronic toxicity on crustacea (<i>Daphnia</i>) | EC ₅₀ | No information available | No information available | No information available | No information available | - |
| | | | | | | |
| 12.4 | Mobility in soil | | | | | |
| | Known or predicted distribution in environmental compartments: | | | | | |
| | No information available | | | | | |
| | Surface tension: | | | | | |
| | Value | °C | Concentration | Method | Note | |
| | No information available | No information available | No information available | No information available | - | |
| | | | | | | |
| | | | | | | |

| | | | | | |
|---------------|---------------------------------|----------------------|-------------|----------|---|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| Adsorption / desorption | | | | | | |
|-------------------------|-------------------------------------|-------------|--------------------------|--------------------------|--------------------------|------|
| Transport | A/D coefficient Henry's constant | | log Kow | Evaporation rate | Method | Note |
| Soil-water | No available | information | No information available | No information available | No information available | - |
| Water-air | No available | information | No information available | No information available | No information available | - |
| Soil-air | No available | information | No information available | No information available | No information available | - |

12.5 Results of PBT and vPvB assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No further relevant information available.

SECTION 13. Disposal considerations

13.1 Waste treatment methods

13.1.1. Product/Packaging disposal:

Submit for disposal to the legal person authorized by the Ministry of Environmental and Nature Protection.

13.1.2. Waste codes/waste designations according to Law:

15 01 10*: Packaging that contains residual hazardous substances or is contaminated with hazardous substances

13.1.3. Waste treatment – relevant information:

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|---------|---|
| | No information available |
| 13.1.4. | Sewage disposal – relevant information: |
| | Waste must not be disposed of into the sewage system. |
| 13.1.5. | Other disposal recommendations: |
| | Do not dispose of the product's remains into the sewage system. Submit the remains to the collectors authorized by the ministry in charge. Do not dispose of the packaging into the sewage system. Submit the packaging to the collectors authorized by the ministry in charge. |
| 13.1.6. | Relevant Community provisions: |
| | Disposal must be made according to official regulations. |

SECTION 14. Transport information

| | |
|-------------------------------|--------------------------------------|
| | Transporting/shipment by road (ADR) |
| UN number: | Not subject to transport regulations |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| | Transporting/shipment by rail (RID) |
| UN number: | Not subject to transport regulations |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| | Inland waterway transport (ADN) |
| UN number: | Not subject to transport regulations |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| | Transporting/shipment by sea (IMDG) |
| UN number: | Not subject to transport regulations |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|---|--------------------------------------|
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: | - |
| Transporting/shipment by air (ICAO-TI/IATA-DGR) | |
| UN number: | Not subject to transport regulations |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Further information: | |
| - | |

| SECTION 15. Regulatory information | | |
|------------------------------------|--|--|
| 15.1 | Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| | EU regulations | |
| | Authorization and/or restrictions of use | |
| | Authorizations: | - |
| | Restrictions: | - |
| | Other EU regulations: | <p>Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;</p> <p>Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC;</p> <p>Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work;</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;</p> <p>REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII);</p> |

| | | | | |
|---------------|---------------------------------|----------------------|-------------|------------|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|------|--|---|
| | Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline) | |
| | National legislation: | Chemicals Act, Regulation on classification, packaging and labeling of dangerous substances, Ordinance on occupational exposure limit values and on biological limit values, Regulation on categories, types and classification of waste with a waste catalog and list of hazardous waste, Ordinance on writing Material safety data sheet, Transport of Hazardous Substances Act |
| 15.2 | Chemical safety assessment | |
| | None | |

| SECTION 16. Other information | | | |
|-------------------------------|---|--------------------------|--|
| 16.1 | Indication of changes: | | - |
| 16.2 | Abbreviations and acronyms: | | ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonised System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) DNEL: Derived No-Effect Level (UK REACH) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative |
| 16.3. | Key literature references and source of data: | | - |
| 16.4. | Classification and procedure used to derive the classification for mixture according to Regulation (EC) 1272/2008 (CLP) | | |
| Classification | | Classification procedure | |
| - | | - | |
| 16.5. | Relevant H statements (number and full text) | | |
| | H: | 315 319 335 | Causes skin irritation Causes serious eye irritation. May cause respiratory irritation. |
| 16.6. | Training advice: | | - |
| 16.7. | Further information: | | ** "X" in the product code marks different volumes (different packagings of the product) We are not responsible for consequences in case of failure to comply with instructions for use or improper use of the product described in this material safety data sheet. |

| | | | | | |
|---------------|---------------------------------|----------------------|-------------|----------|---|
| Trading name: | OXALIC ACID, 1% SOLUTION | | | | |
| Product code: | OKS1-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| |
|---|
| ANNEX: Exposure scenario resulting to chemical safety assessment |
| - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| SECTION 1: Identification of the substance/mixture and of the company/undertaking | | |
|---|---|---|
| 1.1. | Product identifier | |
| | Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION |
| | Chemical name: | - |
| | Catalogue number: | KP05-OT-X** |
| 1.2. | Relevant identified uses of the substance or mixture and uses advised against | |
| | Uses: | For use with special staining kits. |
| | Uses advised against: | Only the identified uses are advised. |
| | Reason why uses advised against: | The product is intended for use only as an <i>in vitro</i> diagnostic medical device, registered at the Agency for Medicinal Products and Medical Devices and there is no reason to use it for other purposes |
| 1.3. | Details of the supplier of the safety data sheet | |
| | Supplier: | BioGnost Ltd. |
| | Address: | Medjugorska 59, Zagreb |
| | Telephone number: | +385 1 2409997 |
| | Fax no.: | +385 1 2404039 |
| | e-mail of competent person: | msds@biognost.hr |
| | National contact: | - |
| 1.4. | Emergency telephone number | |
| | National Protection and Rescue Directorate: | 112 |
| | Medical information: | +385 1 2348 342 |
| | Other information: | - |

| SECTION 2. Hazards identification | | |
|--|--|---------------------------------------|
| 2.1. | Classification of the substance or mixture | |
| 2.1.1. | Classification according to Regulation (EC) No 1272/2008 (CLP) | |
| | Hazard class and category code: | Hazard statements*: |
| | Aquatic Chronic 3 | H412 |
| 2.1.2. | Additional information | |
| | - | |
| *For full text of Hazard- and EU Hazard-statements: see Section 16 | | |
| 2.2. | Label elements | |
| | Product identification: | POTASSIUM PERMANGANATE, 0.5% SOLUTION |
| | Identification number: | - |
| | Authorization no.: | - |
| | Hazard pictograms: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | |
|------|--|---|
| | Signal word: | - |
| | Hazard statements: | H412 Harmful to aquatic life with long lasting effects. |
| | Precautionary statements: | P273 Avoid release to the environment P501 Dispose of contents/container in accordance with local regulations. |
| | Further information: | - |
| 2.3. | Other hazards | |
| | Endocrine Disrupting Properties: No known endocrine disrupting properties Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. | |

| SECTION 3. Composition/information on ingredients | | | | |
|---|--------------------------|--------------------------------|---------------------------|---|
| CAS/ EC/ Index no. | REACH Registration No | Weight % content (or range) | Identification name | Classification according to Regulation (EC) No 1272/2008 (CLP) |
| 7722-64-7/ 231-760-3/ 025-002-00-9 | - | 0.5 % | potassium permanganate | Oxid. Solid 2; H272 Acute Tox. 4; H302 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 |

| SECTION 4. First aid measures | | |
|-------------------------------|--|--------------------------|
| 4.1. | Description of first aid measures | |
| | General notes: | - |
| | Following inhalation: | No information available |
| | Following skin contact: | No information available |
| | Following eye contact: | No information available |
| | Following ingestion: | No information available |
| | Self-protection of the first aider: | Treat symptomatically. |
| 4.2. | Most important symptoms and effects, both acute and delayed | |
| | Following inhalation: | No information available |
| | Following skin contact: | No information available |
| | Following eye contact: | No information available |
| | Following ingestion: | No information available |
| 4.3. | Indication of any immediate medical attention and special treatment needed | |
| | - | |

| |
|--|
| SECTION 5 Firefighting measures |
|--|

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | | | | |
|---------------------------------|--|-------------------------------|---|---------------------------------|-----------|
| 5.1. | Extinguishing media | | | | |
| | <table> <tr> <td>Suitable extinguishing media:</td><td>Small fire - water spray, dry powder, CO₂ Large fire - water spray or alcohol-resistant foam</td></tr> <tr> <td>Unsuitable extinguishing media:</td><td>water jet</td></tr> </table> | Suitable extinguishing media: | Small fire - water spray, dry powder, CO ₂ Large fire - water spray or alcohol-resistant foam | Unsuitable extinguishing media: | water jet |
| Suitable extinguishing media: | Small fire - water spray, dry powder, CO ₂ Large fire - water spray or alcohol-resistant foam | | | | |
| Unsuitable extinguishing media: | water jet | | | | |
| 5.2. | Special hazards arising from the substance or mixture | | | | |
| | Hazardous combustion products: No information available | | | | |
| 5.3. | Advice for firefighters | | | | |
| | Use a self-contained open-circuit compressed air breathing apparatus and fireproof clothing. Cool closed containers exposed to fire with water spray or vapor. | | | | |
| 5.4. | Additional information | | | | |
| | Remove sources of heat and ignition. Do not contaminate the environment with extinguishing media. | | | | |

| | | | | | | | |
|--|---|--|--|------------------------------|---|---------------------------|-----------------------------------|
| SECTION 6. Accidental release measures | | | | | | | |
| 6.1. | Personal precautions, protective equipment and emergency procedures | | | | | | |
| 6.1.1. | For non-emergency personnel | | | | | | |
| | <table> <tr> <td>Protective equipment:</td><td>Use personal protective equipment (see Section 8).</td></tr> <tr> <td>Accident prevention methods:</td><td>Evacuate members of all non-essential personnel and those members without protective equipment. Remove all sources of sparks and ignition. Do not smoke.</td></tr> <tr> <td>Emergency procedures:</td><td>Mark the area using proper signs.</td></tr> </table> | Protective equipment: | Use personal protective equipment (see Section 8). | Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Remove all sources of sparks and ignition. Do not smoke. | Emergency procedures: | Mark the area using proper signs. |
| Protective equipment: | Use personal protective equipment (see Section 8). | | | | | | |
| Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Remove all sources of sparks and ignition. Do not smoke. | | | | | | |
| Emergency procedures: | Mark the area using proper signs. | | | | | | |
| 6.1.2. | For emergency responders: | | | | | | |
| | Wear protective equipment (see Section 8). | | | | | | |
| 6.2. | Environmental precautions: | | | | | | |
| | Do not dispose of in sewage, drainage system and waterways. In case of large spillage contact National Protection and Rescue Directorate (NPRD) on 112. | | | | | | |
| 6.3. | Methods and material for containment and cleaning up | | | | | | |
| 6.3.1. | <table> <tr> <td>Bunding, covering of drains; capping procedures:</td><td>Sand or clay barriers.</td></tr> <tr> <td>6.3.2. Cleaning up:</td><td>Where possible, the substance can be absorbed by using inflammable material (sand, diatomaceous earth, vermiculite). Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water.</td></tr> <tr> <td>6.3.3. Other information:</td><td>-</td></tr> </table> | Bunding, covering of drains; capping procedures: | Sand or clay barriers. | 6.3.2. Cleaning up: | Where possible, the substance can be absorbed by using inflammable material (sand, diatomaceous earth, vermiculite). Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water. | 6.3.3. Other information: | - |
| Bunding, covering of drains; capping procedures: | Sand or clay barriers. | | | | | | |
| 6.3.2. Cleaning up: | Where possible, the substance can be absorbed by using inflammable material (sand, diatomaceous earth, vermiculite). Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water. | | | | | | |
| 6.3.3. Other information: | - | | | | | | |
| 6.4. | Reference to other sections | | | | | | |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| |
|---|
| See Section 7 for information about secure handling. See Section 8 for information about personal protective equipment. See Section 13 for information about containment. |
|---|

| SECTION 7. Handling and storage | | |
|---------------------------------|--|---|
| 7.1. | Precautions for safe handling | |
| 7.1.1. | Protection measures | |
| | Measures to prevent fire: | Keep away from sources of heat and ignition. Do not smoke. |
| | Measures to prevent aerosol and dust generation: | Secure proper ventilation. |
| | Measures to protect the environment: Other measures: | Prevent spilling into the sewage system and waterways. - |
| 7.1.2. | Advice on general occupational hygiene: | |
| | Do not eat, drink or smoke in the workspace. Thoroughly wash hands after work and before eating. | |
| 7.2. | Conditions for safe storage, including any incompatibilities | |
| | Technical measures and storage conditions: | Keep in tightly closed and upright set containers in a well ventilated storage rooms, and away from sources of heat, sunlight, and other incompatible substances. |
| | Packaging materials: | Manufacturer's original packaging. |
| | Requirements for storage rooms and vessels: | Keep away from food and drink. Keep the containers tightly closed. |
| | Advices for storage equipment: | The storage must be made of hard material; floors must be resistant to chemicals. There must be no drain that directly leads into sewage system. Secure proper ventilation. |
| | Further information on storage conditions: | Do not place the unused material in the storage room and do not use empty containers for storing other chemicals. Do not store with incompatible materials (see Section 9). |
| 7.3. | Specific end use(s) | |
| | Recommendations: | - |
| | Industrial sector specific solutions: | - |

| SECTION 8. Exposure controls/personal protection | | | | |
|--|--------------------|--|-------------------|-------------------------|
| 8.1. | Control parameters | | | |
| Substance | CAS No | Occupational exposure limit values/short term values | | Biological limit values |
| | | ppm | mg/m ³ | |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | | | |
|------------------------|-----------|---|---|--------------------------|
| Potassium permanganate | 7722-64-7 | - | 5 | No information available |
|------------------------|-----------|---|---|--------------------------|

| | | | | |
|-----------------|---|---------|---|--|
| Substance name: | - | | | |
| EC No: | - | CAS No: | - | |

DNEL

Industrial

| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
|---------------------------|--------------------|-----------------------|----------------------|-------------------------|
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |

Critical physical parameters: solubility, flammability, corrosivity: -

Consumer

| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
|---------------------------|--------------------|-----------------------|----------------------|-------------------------|
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |

PNEC

| Environmental protection target | PNEC |
|------------------------------------|--------------------------|
| Fresh water | No information available |
| Freshwater sediments | No information available |
| Marine water | No information available |
| Marine sediments | No information available |
| Food chain | No information available |
| Microorganisms in sewage treatment | No information available |
| Soil (agricultural) | No information available |
| Air | No information available |

8.2. Exposure controls

8.2.1. Appropriate engineering controls

| | |
|--|---|
| Substance/mixture related measures to prevent exposure during identified uses: | Use the product in well ventilated rooms. Use personal protective equipment. Do not eat, drink or smoke in the workspace. |
| Structural measures to prevent exposure: | No information available |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | |
|----------|---|--|
| | Organisational measures to prevent exposure: | Organization of work in order to reduce other worker's influence during work process. |
| | Technical measures to prevent exposure: | Secure proper workspace ventilation in order to keep concentration levels in air below permitted levels. |
| 8.2.2. | Personal protection equipment | |
| 8.2.2.1. | Eye and face protection: | Safety glasses that stick to face (preventing splashing) (EN 166) or visor. |
| 8.2.2.2. | Skin protection | |
| | Hand protection: | Protective gloves must be according to the EU Directive 2016/425/EEC and standard EN 374. Glove material: nitrile rubber Glove thickness: ≥ 0.50 mm Break through time: >480 min |
| | Other skin protection: | Wear antistatic clothing made of natural fibers (such as cotton) with long sleeves (EN 13034), and shoes that cover the entire foot (EN 10335). |
| 8.2.2.3. | Respiratory protection: | Protective full face mask (EN 136) or half mask (EN 140) equipped with a filter for organic vapors, type "A" (boiling point >65°C) according to EN 14387) used when concentration levels exceed GVI. |
| 8.2.2.4. | Thermal hazards: | No information available |
| 8.2.3. | Environmental exposure controls | |
| | Substance/mixture related measures to prevent exposure: | See Section 6 |
| | Structural measures to prevent exposure: | Use modern equipment. |
| | Organisational measures to prevent exposure: | Adapt the work process to the required working conditions of the workplace. |
| | Technical measures to prevent exposure: | See Section 6 |

| SECTION 9. Physical and chemical properties | | | |
|--|---|----------------------------------|--------------------------|
| 9.1. | Information on basic physical and chemical properties | | |
| | | Value | Method |
| | Physical state: | liquid | No information available |
| | Colour: | dark purple | No information available |
| | Odour/odour threshold: | no odor/no information available | No information available |
| | Melting point / freezing point: | No information available | No information available |
| | Boiling point or initial boiling point and boiling range: | No information available | No information available |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | | | |
|------|--|--------------------------|--------------------------|
| | Flammability: | No information available | No information available |
| | Lower and upper explosion limit: | No information available | No information available |
| | Flash point: | No information available | No information available |
| | Auto-ignition temperature: | No information available | No information available |
| | Decomposition temperature: | No information available | No information available |
| | pH: | No information available | No information available |
| | Kinematic viscosity: | No information available | No information available |
| | Solubility: | No information available | No information available |
| | Partition coefficient n-octanol/water (log value): | No information available | No information available |
| | Vapour pressure: | No information available | No information available |
| | Density and/or relative density: | No information available | No information available |
| | Relative vapour density: | No information available | No information available |
| | Particle characteristics: | No information available | No information available |
| 9.2. | Other information | | |
| | - | | |

| SECTION 10. Stability and reactivity | | |
|--------------------------------------|-------------------------------------|--|
| 10.1. | Reactivity: | See subsections 10.3 through 10.5. |
| 10.2. | Chemical stability: | The product is chemically stable under standard ambient conditions of storing and using. |
| 10.3. | Possibility of hazardous reactions: | No information available. |
| 10.4. | Conditions to avoid: | No information available. |
| 10.5. | Incompatible materials: | No information available. |
| 10.6. | Hazardous decomposition products: | No information available. |

| SECTION 11. Toxicological information | | | | | |
|---------------------------------------|--------------------------------------|---------|---|---------------|---------|
| 11.1. | Information on toxicological effects | | | | |
| | Acute toxicity: | | | | |
| Route of exposure: | Method | Species | Effective dose LD ₅₀ /LC ₅₀ or ATE _{mixture} | Exposure time | Results |
| Oral exposure: | No information available | - | LD ₅₀ | - | - |
| Dermal exposure: | No information available | - | LD ₅₀ | - | - |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | | | | | |
|----------------------|--------------------------|---|------------------|---|---|
| Inhalation exposure: | No information available | - | LC ₅₀ | - | - |
|----------------------|--------------------------|---|------------------|---|---|

| |
|---|
| Specific target organ toxicity – single exposure (STOT SE): |
|---|

| | Specific effects | Target organ | Note |
|----------------------|--------------------------|--------------------------|------|
| Oral exposure: | No information available | No information available | - |
| Dermal exposure: | No information available | No information available | - |
| Inhalation exposure: | No information available | No information available | - |

| | |
|-------------------------|--------------------------|
| Respiratory irritation: | No information available |
|-------------------------|--------------------------|

| |
|--------------------------|
| Irritation and corrosion |
|--------------------------|

| | Exposure time | Species | Evaluation | Method | Note |
|------------------|---------------|---------|------------|--------|------|
| Skin irritation: | - | - | - | - | - |
| Eye irritation: | - | - | - | - | - |

| |
|---------------|
| Sensitization |
|---------------|

| | |
|----------------------|--------------------------|
| Dermal exposure: | No information available |
| Inhalation exposure: | No information available |

| |
|--|
| Symptoms related to the physical, chemical and toxicological characteristics |
|--|

| | |
|----------------------|--------------------------|
| Oral exposure: | No information available |
| Dermal exposure: | No information available |
| Inhalation exposure: | No information available |
| Eye exposure: | No information available |

| |
|--|
| Repeated dose toxicity (subacute, subchronic, chronic) |
|--|

| | Dose | Exposure time | Species | Method | Evaluation | Note |
|-----------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Subacute oral | No information available | No information available | No information available | No information available | No information available | - |
| Subacute dermal | No information available | No information available | No information available | No information available | No information available | - |

| | | | | | | |
|---------------|--|----------------------|-------------|----------|---|--|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 | |

| | | | | | | |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|
| Subacute inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Chronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Chronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | No information available | No information available | No information available | - |

| | | | |
|---|--------------------------|--------------------------|------|
| Specific target organ toxicity – repeated exposure (STOT RE): | | | |
| | Specific effects | Target organ | Note |
| Subacute oral | No information available | No information available | - |
| Subacute dermal | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | - |
| Subchronic oral | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | - |
| Chronic oral | No information available | No information available | - |
| Chronic dermal | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | - |

| | |
|--|--------------------------|
| CMR effects (carcinogenicity, mutagenicity, reproductive toxicity) | |
| Carcinogenicity: | No information available |
| Mutagenicity <i>in-vitro</i> : | No information available |
| Genotoxicity: | No information available |
| Mutagenicity <i>in-vivo</i> : | No information available |

| | | | | | | |
|---------------|--|----------------------|-------------|----------|---|--|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 | |

| | | |
|---------|---|--------------------------|
| | Germ cell mutagenicity: | No information available |
| | Reproductive toxicity: | No information available |
| | Summary of evaluation of the CMR properties: | - |
| 11.2 | Information on other hazards: | |
| 11.2.1. | Endocrine disrupting properties: | |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. | - |
| 11.2.2. | Other informations: | |
| | - | |

| SECTION 12. Ecological information | | | | | | |
|------------------------------------|------------------|---------------|--------------------------|--------------------------|------------|------|
| 12.1. | Toxicity | | | | | |
| Acute toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | No information available | No information available | - | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | - | - |
| Algae/aquatic plants | IC ₅₀ | 8 days | No information available | No information available | - | - |
| Microorganisms | LC ₅₀ | 72 hours | - | - | - | - |
| Chronic toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | No information available | No information available | - | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | - | - |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | | | | | | |
|----------------------|------------------|----------|--------------------------|--------------------------|---|---|
| Algae/aquatic plants | IC ₅₀ | 72 hours | No information available | No information available | - | - |
| Other organisms | - | - | - | - | - | - |

12.2. Persistence and degradability

Abiotic degradation

| | Degradation half-lives | Method | Evaluation | Note |
|--------------|--------------------------|--------------------------|--------------------------|------|
| Marine water | No information available | No information available | No information available | - |
| Fresh water | No information available | No information available | No information available | - |
| Air | No information available | No information available | No information available | - |
| Soil | No information available | No information available | No information available | - |

Biodegradation

| % Degradation | Time (days) | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

12.3. Bioaccumulative potential

Partition coefficient: n-octanol/water (log Kow):

| Value | Concentration | pH | °C | Method | Evaluation | Note |
|-------|--------------------------|----|----|--------------------------|--------------------------|------|
| - | No information available | - | - | No information available | No information available | - |
| | | | | | | |
| | | | | | | |

Bioconcentration factor (BCF)

| Value | Species | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

Chronic ecotoxicity

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| Value | Dose | Exposure time | Species | Method | Evaluation | Note |
|--|------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Chronic toxicity on fish | LC ₅₀ | No information available | No information available | No information available | No information available | - |
| Chronic toxicity on crustacea (<i>Daphnia</i>) | EC ₅₀ | No information available | No information available | No information available | No information available | - |

12.4. Mobility in soil

| Known or predicted distribution in environmental compartments: | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|------|
| No information available | | | | | |
| Surface tension: | | | | | |
| | Value | °C | Concentration | Method | Note |
| | No information available | No information available | No information available | No information available | - |
| | | | | | |
| | | | | | |

Adsorption / desorption

| Transport | A/D coefficient Henry's constant | | log Kow | Evaporation rate | Method | Note |
|------------|-------------------------------------|--|--------------------------|--------------------------|--------------------------|------|
| Soil-water | No information available | | No information available | No information available | No information available | - |
| Water-air | No information available | | No information available | No information available | No information available | - |
| Soil-air | No information available | | No information available | No information available | No information available | - |

12.5. Results of PBT and vPvB assessment

| |
|---|
| The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
|---|

12.6. Endocrine disrupting properties

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | |
|--|---|
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
|--|---|

| | |
|-------|--------------------------|
| 12.7. | Other adverse effects |
| | No information available |

SECTION 13. Disposal considerations

| | |
|-------|-------------------------|
| 13.1. | Waste treatment methods |
|-------|-------------------------|

| | |
|---------|--|
| 13.1.1. | Product/Packaging disposal: |
| | Submit for disposal to the legal person authorized by the Ministry of Environmental and Nature Protection. |

| | |
|---------|--|
| 13.1.2. | Waste codes/waste designations according to Law: |
| | No information available |

| | |
|---------|---|
| 13.1.3. | Waste treatment – relevant information: |
| | No information available |

| | |
|---------|---|
| 13.1.4. | Sewage disposal – relevant information: |
| | Waste must not be disposed of into the sewage system. |

| | |
|---------|---|
| 13.1.5. | Other disposal recommendations: |
| | Do not dispose of the product's remains into the sewage system. Submit the remains to the collectors authorized by the ministry in charge. Do not dispose of the packaging into the sewage system. Submit the packaging to the collectors authorized by the ministry in charge. Do not dispose of in places where ignition may occur. |

| | |
|---------|--------------------------------|
| 13.1.6. | Relevant Community provisions: |
| | - |

SECTION 14. Transport information

| | |
|-----------------------------|--|
| | Transporting/shipment by road (ADR) |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (potassium permanganate) |
| Transport hazard class(es): | 9 |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | |
|---|--|
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by rail (RID) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (potassium permanganate) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Inland waterway transport (ADN) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (potassium permanganate) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by sea (IMDG) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (potassium permanganate) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by air (ICAO-TI/IATA-DGR) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (potassium permanganate) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | |
|----------------------|--|
| Further information: | These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to classification. |
|----------------------|--|

| SECTION 15. Regulatory information | | |
|------------------------------------|--|--|
| 15.1. | Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| | EU regulations | |
| | Authorization and/or restrictions of use | |
| | Authorizations: | - |
| | Restrictions: | - |
| | Other EU regulations: | <p>Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;</p> <p>Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC;</p> <p>Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work;</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;</p> <p>REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII);</p> |
| | Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline) | |
| | National legislation: | <p>Chemicals Act, Regulation on classification, packaging and labeling of dangerous substances, Ordinance on occupational exposure limit values and on biological limit values, Regulation on categories, types and classification of waste with a waste catalog and list of hazardous waste, Ordinance on writing Material safety data sheet, Transport of Hazardous Substances Act</p> |
| 15.2. | Chemical safety assessment | |
| | None | |

| SECTION 16. Other information | | |
|-------------------------------|------------------------|---|
| 16.1. | Indication of changes: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | POTASSIUM PERMANGANATE, 0.5% SOLUTION | | | |
| Product code: | KP05-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | |
|----------------|---|---|
| 16.2. | Abbreviations and acronyms: | <p>ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>IATA: International Air Transport Association</p> <p>GHS: Globally Harmonised System of Classification and Labelling of Chemicals</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>CAS: Chemical Abstracts Service (division of the American Chemical Society)</p> <p>DNEL: Derived No-Effect Level (UK REACH)</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>PBT: Persistent, Bioaccumulative and Toxic</p> <p>vPvB: very Persistent and very Bioaccumulative</p> |
| 16.3. | Key literature references and source of data: | - |
| 16.4. | Classification and procedure used to derive the classification for mixture according to Regulation (EC) 1272/2008 (CLP) | |
| Classification | | Classification procedure |
| - | | - |
| 16.5. | Relevant H statements (number and full text) | |
| | <div> <div>272</div> <div>302</div> <div>H: 400</div> <div>410</div> <div>413</div> </div> | <p>May intensify fire; oxidiser.</p> <p>Harmful if swallowed.</p> <p>Very toxic to aquatic life.</p> <p>Very toxic to aquatic life with long lasting effects.</p> <p>May cause long lasting harmful effects to aquatic life.</p> |
| 16.6. | Training advice: | - |
| 16.7. | Further information: | <p>** "X" in the product code marks different volumes (different packagings of the product)</p> <p>We are not responsible for consequences in case of failure to comply with instructions for use or improper use of the product described in this material safety data sheet.</p> |

| |
|--|
| ANNEX: |
| Exposure scenario resulting to Chemical safety assessment |
| - |

| | | | | |
|---------------|--------------------------------|----------------------|-------------|------------|
| Trading name: | SILVER AMMONIA SOLUTION | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| SECTION 1: Identification of the substance/mixture and of the company/undertaking | | |
|---|---|--|
| 1.1 | Product identifier | |
| | Trading name: | SILVER AMMONIA SOLUTION |
| | Chemical name: | - |
| | Catalogue number: | SA-OT-X** |
| 1.2 | Relevant identified uses of the substance or mixture and uses advised against | |
| | Uses: | For use with Reticulin and Reticulin Contrast staining kits. |
| | Uses advised against: | Only the identified uses are advised. |
| | Reason why uses advised against: | The product is intended for use only as an <i>in vitro</i> diagnostic medical device, registered at the Agency for Medicinal Products and Medical Devices and there is no reason to use it for other purposes. |
| 1.3 | Details of the supplier of the safety data sheet | |
| | Supplier: | BioGnost Ltd. |
| | Address: | Medjugorska 59, Zagreb |
| | Telephone number: | +385 1 2409997 |
| | Telefax.: | +385 1 2404039 |
| | e-mail of competent person: | msds@biognost.hr |
| | National contact: | - |
| 1.4 | Emergency telephone number | |
| | National Protection and Rescue Directorate: | 112 |
| | Medical information: | +385 1 2348 342 |
| | Other information: | - |

| SECTION 2. Hazards identification | | |
|--|--|-------------------------|
| 2.1 | Classification of the substance or mixture | |
| 2.1.1 | Classification according to Regulation (EC) No 1272/2008 (CLP) | |
| | Hazard class and category code: | Hazard statements*: |
| | Aquatic Chronic 3 | H412 |
| 2.1.2. | Additional information | |
| | - | |
| *For full text of Hazard- and EU Hazard-statements: see SECTION 16 | | |
| 2.2 | Label elements | |
| | Product identification: | SILVER AMMONIA SOLUTION |
| | Identification number: | - |
| | Authorization number: | - |
| | Hazard pictograms: | - |

| | | | | |
|---------------|--------------------------------|----------------------|-------------|------------|
| Trading name: | SILVER AMMONIA SOLUTION | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | |
|-----|--|--|
| | Signal word: | - |
| | Hazard statements: | H412 Harmful to aquatic life with long lasting effects. |
| | Precautionary statements: | P273 Avoid release to the environment. P501 Dispose of contents/container in accordance with local regulations. |
| | Supplemental hazard information (EU): | - |
| 2.3 | Other hazards | |
| | Endocrine Disrupting Properties: No known endocrine disrupting properties Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. | |

| SECTION 3. Composition/information on ingredients | | | | |
|---|--------------------------|-----------------------------------|---------------------|---|
| CAS/ EC/ Index number | REACH Registration No | Weight % content (or range) | Identification name | Classification according to Regulation (EC) No 1272/2008 (CLP) |
| 7761-88-8/ 231-853-9/ 047-001-00-2 | - | < 1 % | silver nitrate | Ox. Sol. 2; H272 Skin Corr. 1B; H314 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 |
| 1336-21-6/ 215-647-6/ 007-001-01-2 | - | < 1 % | ammonia | Skin Corr. 1B; H314 Aquatic Acute 1; H400 |

| SECTION 4. First aid measures | | |
|-------------------------------|-----------------------------------|---|
| 4.1 | Description of first aid measures | |
| | General notes: | If the suggested first aid measures do not prove sufficient, seek medical attention. |
| | Following inhalation: | Carry the afflicted person out of the contaminated area into a well-ventilated area or out for fresh air. In case of difficult breathing, provide the afflicted person with oxygen. |
| | Following skin contact: | Remove contaminated clothing. Immediately wash with plenty of water for at least 20 minutes. Seek medical assistance if the symptoms of irritation remain. |
| | Following eye contact: | Rinse out with plenty of water with the eyelid held wide open for at least 20 minutes. If the symptoms remain, immediately call in ophthalmologist. |
| | Following ingestion: | Rinse the oral cavity, drink 1-2 glasses of water. Immediately consult a physician and show the container or label. In case of swallowing large quantities, transport the afflicted person to the hospital. |

| | | | | |
|---------------|--------------------------------|----------------------|-------------|------------|
| Trading name: | SILVER AMMONIA SOLUTION | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | |
|-----|--|---|
| | Self-protection of the first aider: | - |
| 4.2 | Most important symptoms and effects, both acute and delayed | |
| | Following inhalation: | Depending on concentration and exposure time, it may lead to mucosa irritation, cough, and dyspnea. |
| | Following skin contact: | Depending on concentration and exposure time, it may lead to irritation, rash, skin drying and skin cracking. |
| | Following eye contact: | Depending on concentration and exposure time, it may lead to irritation, tearing, redness and pain. |
| | Following ingestion: | Danger of gastric perforation. |
| 4.3 | Indication of any immediate medical attention and special treatment needed | |
| | - | |

| | | |
|---|--|---|
| SECTION 5. Firefighting measures | | |
| 5.1 | Extinguishing media | |
| | Suitable extinguishing media: | Water spray, foam, dry powder, CO ₂ or alcohol resistant foam. |
| | Unsuitable extinguishing media: | Water with full jet. |
| 5.2 | Special hazards arising from the substance or mixture | |
| | Hazardous combustion products: | Nitrogen oxides (NO _x). During heating or in case of fire poisonous gases are produced. |
| 5.3 | Advice for firefighters | |
| | Use a self-contained open-circuit compressed air breathing apparatus and fireproof clothing. | |
| 5.4 | Additional information | |
| | Do not contaminate the environment with extinguishing media. | |

| | | |
|---|--|--|
| SECTION 6. Accidental release measures | | |
| 6.1 | Personal precautions, protective equipment and emergency procedures | |
| 6.1.1. | For non-emergency personnel | |
| | Protective equipment: | Use personal protective equipment (see Section 8). |
| | Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Avoid breathing vapors and avoid contact with skin and eyes. Do not smoke. |
| | Emergency procedures: | Mark the area using proper signs. |
| 6.1.2. | For emergency responders: | |
| | Use protective equipment; in case of inadequate ventilation use adequate airways protective equipment (see Section 8). | |
| 6.2 | Environmental precautions: | |

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | | |
|--------|--|---|
| | Do not dispose of in sewage, drainage system and waterways. In case of large spillage contact National Protection and Rescue Directorate (NPRD) on 112. | |
| 6.3 | Methods and material for containment and cleaning up | |
| 6.3.1. | Bunding, covering of drains; capping procedures: | Sand or clay barriers. |
| 6.3.2. | Cleaning up: | Where possible, the substance can be absorbed by using absorbing material. Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water. |
| 6.3.3. | Other information: | Do not use incompatible materials (see Section 10). |
| 6.4 | Reference to other sections | |
| | See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information. | |

| | | |
|--|--|---|
| SECTION 7. Handling and storage | | |
| 7.1 | Precautions for safe handling | |
| 7.1.1. | Protection measures | |
| | Measures to prevent fire: | Use in well ventilated storage rooms. Keep away from sources of ignition and heat. |
| | Measures to prevent aerosol and dust generation: | Secure proper ventilation. |
| | Measures to protect the environment: | Prevent spilling into the sewage system and waterways. |
| | Other measures: | - |
| 7.1.2. | Advice on general occupational hygiene: | |
| | Do not eat, drink or smoke in the workspace. Thoroughly wash hands after work and before eating. | |
| 7.2 | Conditions for safe storage, including any incompatibilities | |
| | Technical measures and storage conditions: | Keep in tightly closed and upright set containers at temperatures ranging from +2 to +8 °C. |
| | Packaging materials: | Manufacturer's original packaging. Avoid metal containers. |
| | Requirements for storage rooms and vessels: | Keep away from food and drink. Keep the containers tightly closed. |
| | Advices for storage equipment: | The storage must be made of hard material; floors must be resistant to chemicals. There must be no drain that directly leads into sewage system. Secure proper ventilation. |

| | | | | |
|---------------|--------------------------------|----------------------|-------------|------------|
| Trading name: | SILVER AMMONIA SOLUTION | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | | |
|-----|--|--|
| | Further information on storage conditions: | Do not place the unused material in the storage room and do not use empty containers for storing other chemicals. Do not store with incompatible materials (see Section 10). |
| 7.3 | Specific end use(s) | |
| | Recommendations: | - |
| | Industrial sector specific solutions: | - |

SECTION 8. Exposure controls/personal protection

| 8.1 | Control parameters | | | |
|-----------|--------------------|--|-------------------|-------------------------|
| Substance | CAS No | Occupational exposure limit values/short term values | | Biological limit values |
| | | ppm | mg/m ³ | |
| - | - | - | - | - |

| | | | | |
|-----------------|---|---------|---|--|
| | | | | |
| Substance name: | - | | | |
| EC No: | - | CAS No: | - | |

DNEL

| Industrial | | | | |
|--------------------|--------------------|-----------------------|----------------------|-------------------------|
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |

| | |
|--|---|
| Critical physical parameters: solubility, flammability, corrosivity: | - |
|--|---|

Consumer

| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
|--------------------|--------------------|-----------------------|----------------------|-------------------------|
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |

PNEC

| Environmental protection target | PNEC |
|---------------------------------|--------------------------|
| Fresh water | no information available |
| Freshwater sediments | no information available |
| Marine water | no information available |
| Marine sediments | no information available |

| | | | | |
|---------------|--------------------------------|----------------------|-------------|------------|
| Trading name: | SILVER AMMONIA SOLUTION | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | |
|------------------------------------|--------------------------|
| Food chain | no information available |
| Microorganisms in sewage treatment | no information available |
| Soil (agricultural) | no information available |
| Air | no information available |

| | |
|-----|-------------------|
| 8.2 | Exposure controls |
|-----|-------------------|

| | |
|--------|----------------------------------|
| 8.2.1. | Appropriate engineering controls |
|--------|----------------------------------|

| | | |
|--|--|--|
| | Substance/mixture related measures to prevent exposure during identified uses: | Use the product in well ventilated rooms. Use personal protective equipment. Do not eat, drink or smoke in the workspace. |
| | Structural measures to prevent exposure: | In accordance with Section 7. |
| | Organisational measures to prevent exposure: | Organization of work in order to reduce other worker's influence during work process. |
| | Technical measures to prevent exposure: | Secure proper workspace ventilation in order to keep concentration levels in air below permitted levels. Secure stations for rinsing eyes and showering. |

| | |
|--------|-------------------------------|
| 8.2.2. | Personal protection equipment |
|--------|-------------------------------|

| | | |
|----------|--------------------------|--|
| 8.2.2.1. | Eye and face protection: | Safety glasses that stick to face (EN 166) or visor in case of lower levels of concentration in air; protective gas mask that covers the entire face in case of higher levels of concentration in air. |
| 8.2.2.2. | Skin protection | |
| | Hand protection: | Protective nitrile gloves, >0.11 mm thick (EN 374). |
| | Other skin protection: | Wear antistatic clothing made of natural fibers (such as cotton) with long sleeves (EN 340) and shoes that cover the entire foot. |
| 8.2.2.3. | Respiratory protection: | Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. |
| 8.2.2.4. | Thermal hazards: | No information available |

| | |
|--------|---------------------------------|
| 8.2.3. | Environmental exposure controls |
|--------|---------------------------------|

| | | |
|--|---|---|
| | Substance/mixture related measures to prevent exposure: | See Section 6 |
| | Structural measures to prevent exposure: | Use modern equipment. |
| | Organisational measures to prevent exposure: | Adapt the work process to the required working conditions of the workplace. |
| | Technical measures to prevent exposure: | See Section 6 |

| | | | | |
|---------------|--------------------------------|----------------------|-------------|------------|
| Trading name: | SILVER AMMONIA SOLUTION | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| SECTION 9. Physical and chemical properties | | | |
|--|---|--|--------------------------|
| 9.1 | Information on basic physical and chemical properties | | |
| | | Value | Method |
| | Physical state: | liquid | No information available |
| | Colour: | colourless | No information available |
| | Odour/odour threshold: | mild ammonia like/No information available | No information available |
| | Melting point / freezing point: | No information available | No information available |
| | Boiling point or initial boiling point and boiling range: | No information available | No information available |
| | Flammability: | No information available | No information available |
| | Lower and upper explosion limit: | No information available | No information available |
| | Flash point: | No information available | No information available |
| | Auto-ignition temperature: | No information available | No information available |
| | Decomposition temperature: | No information available | No information available |
| | pH: | No information available | No information available |
| | Kinematic viscosity: | No information available | No information available |
| | Solubility: | No information available | No information available |
| | Partition coefficient n-octanol/water (log value): | No information available | No information available |
| | Vapour pressure: | No information available | No information available |
| | Density and/or relative density: | No information available | No information available |
| | Relative vapour density: | No information available | No information available |
| | Particle characteristics: | No information available | No information available |
| 9.2 | Other information | | |
| | - | | |

| SECTION 10. Stability and reactivity | | |
|---|-------------------------------------|--|
| 10.1 | Reactivity: | See subsections 10.3 through 10.5. |
| 10.2 | Chemical stability: | The product is chemically stable under standard ambient conditions of storing and using. |
| 10.3 | Possibility of hazardous reactions: | No dangerous reactions known. |
| 10.4 | Conditions to avoid: | No information available |
| 10.5 | Incompatible materials: | No information available |
| 10.6 | Hazardous decomposition products: | No information available |

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| SECTION 11. Toxicological information | | | | | |
|---------------------------------------|--|---------------------------|---|--------------------------|---------|
| 11.1 | Information on hazard classes as defined in Regulation (EC) No 1272/2008 | | | | |
| | Acute toxicity: | | | | |
| Route of exposure: | Method | Species | Dose LD ₅₀ /LC ₅₀ or ATE _{mix} | Exposure time | Results |
| Oral: | - | No information available | - | No information available | - |
| Dermal: | - | No information available | - | No information available | - |
| Inhalation: | - | No information available | - | No information available | - |
| | | | | | |
| | Specific target organ toxicity – single exposure (STOT SE): | | | | |
| | Specific effects | | Target organ | | Note |
| Oral: | No information available | | No information available | | - |
| Dermal: | No information available | | No information available | | - |
| Inhalation: | No information available | | No information available | | - |
| | | | | | |
| | Aspiration hazard: | | No information available. | | |
| | | | | | |
| | Irritation and corrosion | | | | |
| Exposure time | | Species | Evaluation | Method | Note |
| Skin corrosion/irritation: | - | - | - | - | - |
| Serious eye damage/irritation | - | - | - | - | - |
| | | | | | |
| | Sensitization | | | | |
| Skin sensitization: | | - | | | |
| Respiratory sensitization: | | - | | | |
| | | | | | |
| | Symptoms related to the physical, chemical and toxicological characteristics | | | | |
| Oral exposure: | | No information available. | | | |
| Dermal exposure: | | No information available. | | | |
| Inhalation exposure: | | No information available. | | | |
| Eye exposure: | | No information available. | | | |

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| Repeated dose toxicity (subacute, subchronic, chronic) | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | Dose | Exposure time | Species | Method | Evaluation | Note |
| Subacute oral | No information available | No information available | No information available | No information available | No information available | - |
| Subacute dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Chronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Chronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Specific target organ toxicity – repeated exposure (STOT RE): | | | | | | |
| | Specific effects | | Target organ | | Note | |
| Subacute oral | No information available | | No information available | | - | |
| Subacute dermal | No information available | | No information available | | - | |
| Subacute inhalation | No information available | | No information available | | - | |
| Subchronic oral | No information available | | No information available | | - | |
| Subchronic dermal | No information available | | No information available | | - | |
| Subchronic inhalation | No information available | | No information available | | - | |

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | | | |
|--------------------|--|---------------------------|---|
| Chronic oral | No information available | No information available | - |
| Chronic dermal | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | - |
| | | | |
| | CMR effects (carcinogenicity; mutagenicity; reproductive toxicity) | | |
| | Carcinogenicity: | No information available. | |
| | Mutagenicity <i>in vitro</i> : | No information available. | |
| | Genotoxicity: | No information available. | |
| | Mutagenicity <i>in vivo</i> : | No information available. | |
| | Germ cell mutagenicity: | No information available. | |
| | Reproductive toxicity: | No information available. | |
| | | | |
| | Summary of evaluation of the CMR properties: | No information available. | |
| | | | |
| 11.2. | Information on other hazards: | | |
| 11.2.1. | Endocrine disrupting properties: | | |
| | No known endocrine disrupting properties that affect human health. | | |
| 11.2.2. | Other informations: | | |
| | - | | |

| SECTION 12. Ecological information | | | | | | |
|------------------------------------|------------------|---------------|---|--------|------------|------------------------------|
| 12.1 | Toxicity | | | | | |
| Acute (short-term) toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | Leuciscus idus (Golden orfe) | - | - | 0.011 mg/l (silver nitrate) |
| Crustacea: | EC ₅₀ | 48 hours | <i>Daphnia magna</i> (Water flea) | - | - | 0.0082 mg/l (silver nitrate) |
| Algae/aquatic plants | IC ₅₀ | 4 days | Pseudokirchneriella subcapitata (green algae) | - | - | 0.19 mg/l (silver nitrate) |
| Other organisms | - | - | - | - | - | - |
| Chronic (long-term) toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | | | | | | |
|----------------------|------------------|----------|--------------------------|--------------------------|--------------------------|---|
| Fish | LC ₅₀ | 96 hours | No information available | No information available | No information available | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | No information available | - |
| Algae/aquatic plants | IC ₅₀ | 72 hours | No information available | No information available | No information available | - |
| Other organisms | - | - | - | - | - | - |

12.2 Persistence and degradability

Abiotic degradation

| | Degradation half-lives | Method | Evaluation | Note |
|--------------|--------------------------|--------------------------|--------------------------|------|
| Marine water | No information available | No information available | No information available | - |
| Fresh water | No information available | No information available | No information available | - |
| Air | No information available | No information available | No information available | - |
| Soil | No information available | No information available | No information available | - |

Biodegradation

| % Degradation | Time (days) | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

12.3 Bioaccumulative potential

Octanol-water partition coefficient (log K_{ow})

| Value | Concentration | pH | °C | Method | Evaluation | Note |
|-------|---------------|----|----|--------|------------|------|
| - | - | - | - | - | - | - |
| | | | | | | |
| | | | | | | |

Bioconcentration factor (BCF)

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| Value | Species | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|------|
| No information available | No information available | No information available | No information available | - |
| | | | | |
| | | | | |

| Chronic ecotoxicity | | | | | | |
|--|------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Value | Dose | Exposure time | Species | Method | Evaluation | Note |
| Chronic toxicity on fish | LC ₅₀ | No information available | No information available | No information available | No information available | - |
| Chronic toxicity on crustacea (<i>Daphnia</i>) | EC ₅₀ | No information available | No information available | No information available | No information available | - |

12.4 Mobility in soil

| Known or predicted distribution in environmental compartments: | | | | | |
|--|--------------------------|--------------------------|--------------------------|------|--|
| No information available | | | | | |
| Surface tension: | | | | | |
| Value | °C | Concentration | Method | Note | |
| No information available | No information available | No information available | No information available | - | |
| | | | | | |
| | | | | | |

| Adsorption / desorption | | | | | |
|-------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|------|
| Transport | A/D coefficient Henry's constant | log Kow | Evaporation rate | Method | Note |
| Soil-water | No information available | No information available | No information available | No information available | - |
| Water-air | No information available | No information available | No information available | No information available | - |
| Soil-air | No information available | No information available | No information available | No information available | - |

12.5 Results of PBT and vPvB assessment

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | |
|--|--|
| | This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. |
|--|--|

| | |
|-------|---------------------------------|
| 12.6. | Endocrine disrupting properties |
|-------|---------------------------------|

| | |
|--|---|
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
|--|---|

| | |
|-------|-----------------------|
| 12.7. | Other adverse effects |
|-------|-----------------------|

| | |
|--|--------------------------|
| | No information available |
|--|--------------------------|

| |
|--|
| SECTION 13. Disposal considerations |
|--|

| | |
|------|-------------------------|
| 13.1 | Waste treatment methods |
|------|-------------------------|

| | |
|---------|-----------------------------|
| 13.1.1. | Product/Packaging disposal: |
|---------|-----------------------------|

| | |
|--|--|
| | Submit for disposal to the legal person authorized by the Ministry of Environmental and Nature Protection. |
|--|--|

| | |
|---------|--|
| 13.1.2. | Waste codes/waste designations according to Law: |
|---------|--|

| | |
|--|--|
| | Packaging that contains residual hazardous substances or is contaminated with hazardous substances |
|--|--|

| | |
|---------|---|
| 13.1.3. | Waste treatment – relevant information: |
|---------|---|

| | |
|--|--------------------------|
| | No information available |
|--|--------------------------|

| | |
|---------|---|
| 13.1.4. | Sewage disposal – relevant information: |
|---------|---|

| | |
|--|---|
| | Waste must not be disposed of into the sewage system. |
|--|---|

| | |
|---------|---------------------------------|
| 13.1.5. | Other disposal recommendations: |
|---------|---------------------------------|

| | |
|--|---|
| | Do not dispose of the product's remains into the sewage system. Submit the remains to the collectors authorized by the ministry in charge. Do not dispose of the packaging into the sewage system. Submit the packaging to the collectors authorized by the ministry in charge. |
|--|---|

| | |
|---------|--------------------------------|
| 13.1.6. | Relevant Community provisions: |
|---------|--------------------------------|

| | |
|--|---|
| | - |
|--|---|

| |
|---|
| SECTION 14 TRANSPORT INFORMATION |
|---|

| | |
|--|-------------------------------------|
| | Transporting/shipment by road (ADR) |
|--|-------------------------------------|

| | |
|------------|------|
| UN number: | 3082 |
|------------|------|

| | | | | |
|---------------|--------------------------------|----------------------|-------------|------------|
| Trading name: | SILVER AMMONIA SOLUTION | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 6 |

| | |
|-------------------------------|---|
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (silver ammonium) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |

| | |
|-------------------------------------|---|
| Transporting/shipment by rail (RID) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (silver ammonium) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |

| | |
|---------------------------------|---|
| Inland waterway transport (ADN) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (silver ammonium) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |

| | |
|---|---|
| Transporting/shipment by sea (IMDG) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (silver ammonium) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: | - |

| | |
|---|---|
| Transporting/shipment by air (ICAO-TI/IATA-DGR) | |
| UN number: | 3082 |
| UN proper shipping name: | Environmentally hazardous substance, liquid, n.o.s. (silver ammonium) |
| Transport hazard class(es): | 9 |
| Packing group: | III |
| Environmentally hazardous: | - |
| Special precautions for user: | - |

| | |
|--|--|
| | |
|--|--|

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | |
|----------------------|---|
| Further information: | Packages smaller than or equal to 5 kg / L, not dangerous goods of Class 9. |
|----------------------|---|

| SECTION 15. Regulatory information | | |
|------------------------------------|--|--|
| 15.1 | Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| | EU regulations | |
| | Authorization and/or restrictions of use | |
| | Authorizations: | - |
| | Restrictions: | - |
| | Other EU regulations: | <p>Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;</p> <p>Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC;</p> <p>Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work;</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;</p> <p>REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII);</p> |
| | Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline) | |
| | National legislation: | <p>Chemicals Act, Regulation on classification, packaging and labeling of dangerous substances, Ordinance on occupational exposure limit values and on biological limit values, Regulation on categories, types and classification of waste with a waste catalog and list of hazardous waste, Ordinance on writing Material safety data sheet, Transport of Hazardous Substances Act</p> |
| 15.2 | Chemical safety assessment | |
| | None | |

| SECTION 16. Other information | | |
|-------------------------------|------------------------|---|
| 16.1 | Indication of changes: | - |

| | | | | | |
|---------------|--------------------------------|----------------------|-------------|----------|---|
| Trading name: | SILVER AMMONIA SOLUTION | | | | |
| Product code: | SA-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 6 |

| | | |
|----------------|---|---|
| 16.2 | Abbreviations and acronyms: | <p>ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>IATA: International Air Transport Association</p> <p>GHS: Globally Harmonised System of Classification and Labelling of Chemicals</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>CAS: Chemical Abstracts Service (division of the American Chemical Society)</p> <p>DNEL: Derived No-Effect Level (UK REACH)</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>PBT: Persistent, Bioaccumulative and Toxic</p> <p>vPvB: very Persistent and very Bioaccumulative</p> |
| 16.3. | Key literature references and source of data: | - |
| 16.4. | Classification and procedure used to derive the classification for mixture according to Regulation (EC) 1272/2008 (CLP) | |
| Classification | | Classification procedure |
| - | | - |
| 16.5. | Relevant H statements (number and full text) | |
| | <p>272</p> <p>314</p> <p>H: 400</p> <p>410</p> <p>412</p> | <p>May intensify fire; oxidiser.</p> <p>Causes severe skin burns and eye damage.</p> <p>Very toxic to aquatic life.</p> <p>Very toxic to aquatic life with long lasting effects.</p> <p>Harmful to aquatic life with long lasting effects</p> |
| 16.6. | Training advice: | - |
| 16.7. | Further information: | <p>** "X" in the product code marks different volumes (different packagings of the product)</p> <p>We are not responsible for consequences in case of failure to comply with instructions for use or improper use of the product described in this material safety data sheet.</p> |

| |
|---|
| ANNEX: Exposure scenario resulting to chemical safety assessment |
| - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| SECTION 1. Identification of the substance/mixture and of the company/undertaking | | |
|---|---|---|
| 1.1. | Product identifier | |
| | Trading name: | SODIUM THIOSULFATE, 5% SOLUTION |
| | Chemical name: | - |
| | Catalogue number: | NT5-OT-X** |
| 1.2. | Relevant identified uses of the substance or mixture and uses advised against | |
| | Uses: | For use with special staining kits. |
| | Uses advised against: | Only the identified uses are advised. |
| | Reason why uses advised against: | The product is intended for use only as an <i>in vitro</i> diagnostic medical device, registered at the Agency for Medicinal Products and Medical Devices and there is no reason to use it for other purposes |
| 1.3. | Details of the supplier of the safety data sheet | |
| | Supplier: | BioGnost Ltd. |
| | Address: | Medjugorska 59, Zagreb |
| | Telephone number: | +385 1 2409997 |
| | Fax no.: | +385 1 2404039 |
| | e-mail of competent person: | msds@biognost.hr |
| | National contact: | - |
| 1.4. | Emergency telephone number | |
| | National Protection and Rescue Directorate: | 112 |
| | Medical information: | +385 1 2348 342 |
| | Other information: | - |

| SECTION 2. Hazards identification | | |
|--|--|---------------------------------|
| 2.1. | Classification of the substance or mixture | |
| 2.1.1. | Classification according to Regulation (EC) No 1272/2008 (CLP) | |
| | Hazard class and category code: | Hazard statements*: |
| | Not identified as hazardous substance. | - |
| 2.1.2. | Additional information | |
| | - | |
| *For full text of Hazard- and EU Hazard-statements: see Section 16 | | |
| 2.2. | Label elements | |
| | Product identification: | SODIUM THIOSULFATE, 5% SOLUTION |
| | Identification number: | - |
| | Authorization no.: | - |
| | Hazard pictograms: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|------|--|---|
| | Signal word: | - |
| | Hazard statements: | - |
| | Precautionary statements: | - |
| | Further information: | - |
| 2.3. | Other hazards | |
| | Endocrine Disrupting Properties: No known endocrine disrupting properties Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. | |

SECTION 3. Composition/information on ingredients

| CAS/ EC/ Index no. | REACH Registration No | Weight % content (or range) | Identification name | Classification according to Regulation (EC) No 1272/2008 (CLP) |
|-------------------------------|--------------------------|--------------------------------|---------------------|--|
| 7772-98-7/ 231-867-5/ - | - | 5 % | sodium thiosulphate | not classified |

SECTION 4. First aid measures

| | | |
|------|---|---|
| 4.1. | Description of first aid measures | |
| | General notes: | - |
| | Following inhalation: | Carry the afflicted person out of the contaminated area into a well-ventilated area or out for fresh air. If breathing becomes erratic or it stops, immediately apply artificial respiration (other than mouth-to-mouth) and contact a physician. |
| | Following skin contact: | Remove contaminated clothing. Immediately wash with plenty of water and soap. Seek medical assistance if the symptoms of irritation remain. |
| | Following eye contact: | Rinse out with plenty of water with the eyelid held wide open using clean fingers. If the symptoms remain, immediately call a physician. |
| | Following ingestion: | Do not induce vomiting. Make the afflicted person drink a glass of water. If spontaneous vomiting occurs, wash the mouth with water, then make the person drink 100-200 ml of water and seek medical attention. |
| | Self-protection of the first aider: | Treat symptomatically. |
| 4.2. | Most important symptoms and effects, both acute and delayed | |
| | Following inhalation: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| | Following skin contact: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|------|--|--|
| | Following eye contact: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| | Following ingestion: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| 4.3. | Indication of any immediate medical attention and special treatment needed | |
| | - | |

| SECTION 5. Firefighting measures | | |
|----------------------------------|---|---|
| 5.1. | Extinguishing media | |
| | Suitable extinguishing media: | Small fire - water spray, dry powder, CO ₂ Large fire - water spray or alcohol-resistant foam |
| | Unsuitable extinguishing media: | water jet |
| 5.2. | Special hazards arising from the substance or mixture | |
| | Hazardous combustion products: | No information available |
| 5.3. | Advice for firefighters | |
| | Use a self-contained open-circuit compressed air breathing apparatus and fireproof clothing. Cool closed containers exposed to fire with water spray or vapor. | |
| 5.4. | Additional information | |
| | Remove sources of heat and ignition. Do not contaminate the environment with extinguishing media. | |

| SECTION 6. Accidental release measures | | |
|--|---|--|
| 6.1. | Personal precautions, protective equipment and emergency procedures | |
| 6.1.1. | For non-emergency personnel | |
| | Protective equipment: | Use personal protective equipment (see Section 8). |
| | Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Remove all sources of sparks and ignition. Do not smoke. |
| | Emergency procedures: | Mark the area using proper signs. |
| 6.1.2. | For emergency responders: | |
| | Wear protective equipment (see Section 8). | |
| 6.2. | Environmental precautions: | |
| | Do not dispose of in sewage, drainage system and waterways. In case of large spillage contact National Protection and Rescue Directorate (NPRD) on 112. | |
| 6.3. | Methods and material for containment and cleaning up | |
| 6.3.1. | Bundling, covering of drains; capping procedures: | Sand or clay barriers. |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|--------|-----------------------------|---|
| 6.3.2. | Cleaning up: | Where possible, the substance can be absorbed by using inflammable material (sand, diatomaceous earth, vermiculite). Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water. |
| 6.3.3. | Other information: | - |
| 6.4. | Reference to other sections | |
| | - | |

| SECTION 7. Handling and storage | | |
|---------------------------------|--|---|
| 7.1. | Precautions for safe handling | |
| 7.1.1. | Protection measures | |
| | Measures to prevent fire: | Keep away from sources of heat and ignition. Do not smoke. |
| | Measures to prevent aerosol and dust generation: | Secure proper ventilation. |
| | Measures to protect the environment: | Prevent spilling into the sewage system and waterways. |
| | Other measures: | - |
| 7.1.2. | Advice on general occupational hygiene: | |
| | Do not eat, drink or smoke in the workspace. Thoroughly wash hands after work and before eating. | |
| 7.2. | Conditions for safe storage, including any incompatibilities | |
| | Technical measures and storage conditions: | Keep in tightly closed and upright set containers in a well ventilated storage rooms, and away from sources of heat, sunlight, and other incompatible substances. |
| | Packaging materials: | Manufacturer's original packaging. |
| | Requirements for storage rooms and vessels: | Keep away from food and drink. Keep the containers tightly closed. |
| | Advices for storage equipment: | The storage must be made of hard material; floors must be resistant to chemicals. There must be no drain that directly leads into sewage system. Secure proper ventilation. |
| | Further information on storage conditions: | Do not place the unused material in the storage room and do not use empty containers for storing other chemicals. Do not store with incompatible materials (see Section 9). |
| 7.3. | Specific end use(s) | |
| | Recommendations: | - |
| | Industrial sector specific solutions: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| SECTION 8. Exposure controls/personal protection | | | | |
|--|--------------------|--|----------------------|--------------------------|
| 8.1. | Control parameters | | | |
| Substance | CAS No | Occupational exposure limit values/short term values | | Biological limit values |
| | | ppm | mg/m ³ | |
| - | - | - | - | No information available |
| | | | | |
| Substance name: | - | | | |
| EC No: | - | CAS No: | - | |
| DNEL | | | | |
| Industrial | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |
| Critical physical parameters: solubility, flammability, corrosivity: | | | - | |
| Consumer | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |
| PNEC | | | | |
| Environmental protection target | | PNEC | | |
| Fresh water | | No information available | | |
| Freshwater sediments | | No information available | | |
| Marine water | | No information available | | |
| Marine sediments | | No information available | | |
| Food chain | | No information available | | |
| Microorganisms in sewage treatment | | No information available | | |
| Soil (agricultural) | | No information available | | |
| Air | | No information available | | |
| | | | | |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|----------|--|--|
| 8.2. | Exposure controls | |
| 8.2.1. | Engineering measures | |
| | Substance/mixture related measures to prevent exposure during identified uses: | Use the product in well ventilated rooms. Use personal protective equipment. Do not eat, drink or smoke in the workspace. |
| | Structural measures to prevent exposure: | No information available |
| | Organisational measures to prevent exposure: | Organization of work in order to reduce other worker's influence during work process. |
| | Technical measures to prevent exposure: | Secure proper workspace ventilation in order to keep concentration levels in air below permitted levels. |
| 8.2.2. | Personal protection equipment | |
| 8.2.2.1. | Eye and face protection: | Safety glasses that stick to face (preventing splashing) (EN 166) or visor. |
| 8.2.2.2. | Skin protection | |
| | Hand protection: | Protective gloves must be according to the EU Directive 2016/425/EEC and standard EN 374. Glove material: nitrile rubber Glove thickness: ≥0.50 mm Break through time: >480 min |
| | Other skin protection: | Wear antistatic clothing made of natural fibers (such as cotton) with long sleeves (EN 13034), and shoes that cover the entire foot (EN 10335). |
| 8.2.2.3. | Respiratory protection: | Protective full face mask (EN 136) or half mask (EN 140) equipped with a filter for organic vapors, type "A" (boiling point >65°C) according to EN 14387) used when concentration levels exceed GVI. |
| 8.2.2.4. | Thermal hazards: | No information available |
| 8.2.3. | Environmental exposure controls | |
| | Substance/mixture related measures to prevent exposure: | See Section 6 |
| | Structural measures to prevent exposure: | Use modern equipment. |
| | Organisational measures to prevent exposure: | Adapt the work process to the required working conditions of the workplace. |
| | Technical measures to prevent exposure: | See Section 6 |

| SECTION 9. Physical and chemical properties | | | |
|---|---|-------|--------|
| 9.1. | Information on basic physical and chemical properties | | |
| | | Value | Method |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | | |
|------|---|--------------------------|--------------------------|
| | Physical state: | liquid | No information available |
| | Colour: | colourless | No information available |
| | Odour/odour threshold: | no information available | No information available |
| | Melting point / freezing point: | No information available | No information available |
| | Boiling point or initial boiling point and boiling range: | No information available | No information available |
| | Flammability: | No information available | No information available |
| | Lower and upper explosion limit: | No information available | No information available |
| | Flash point: | No information available | No information available |
| | Auto-ignition temperature: | No information available | No information available |
| | Decomposition temperature: | No information available | No information available |
| | pH: | No information available | No information available |
| | Kinematic viscosity: | No information available | No information available |
| | Solubility: | No information available | No information available |
| | Partition coefficient n-octanol/water (log value): | No information available | No information available |
| | Vapour pressure: | No information available | No information available |
| | Density and/or relative density: | No information available | No information available |
| | Relative vapour density: | No information available | No information available |
| | Particle characteristics: | No information available | No information available |
| 9.2. | Other information | | |
| | - | | |

| SECTION 10. Stability and reactivity | | |
|--------------------------------------|-------------------------------------|--|
| 10.1. | Reactivity: | See subsections 10.3 through 10.5. |
| 10.2. | Chemical stability: | The product is chemically stable under standard ambient conditions of storing and using. |
| 10.3. | Possibility of hazardous reactions: | No information available |
| 10.4. | Conditions to avoid: | No information available |
| 10.5. | Incompatible materials: | No information available |
| 10.6. | Hazardous decomposition products: | No information available |

| SECTION 11. Toxicological information | |
|---------------------------------------|--|
| 11.1. | Information on hazard classes as defined in Regulation (EC) No 1272/2008 |
| | Acute toxicity: |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| Route of exposure: | Method | Species | Effective dose LD ₅₀ /LC ₅₀ or ATE _{mixture} | Exposure time | Results |
|----------------------|--------------------------|---------|--|---------------|---------|
| Oral exposure: | No information available | - | LD ₅₀ | - | - |
| Dermal exposure: | No information available | - | LD ₅₀ | - | - |
| Inhalation exposure: | No information available | - | LC ₅₀ | - | - |

Specific target organ toxicity – single exposure (STOT SE):

| | Specific effects | Target organ | Note |
|----------------------|--------------------------|--------------------------|------|
| Oral exposure: | No information available | No information available | - |
| Dermal exposure: | No information available | No information available | - |
| Inhalation exposure: | No information available | No information available | - |

Respiratory irritation: No information available

Irritation and corrosion

| | Exposure time | Species | Evaluation | Method | Note |
|------------------|---------------|---------|------------|--------|------|
| Skin irritation: | - | - | - | - | - |
| Eye irritation: | - | - | - | - | - |

Sensitization

| | |
|----------------------|--------------------------|
| Dermal exposure: | No information available |
| Inhalation exposure: | No information available |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|----------------------|--------------------------|
| Oral exposure: | No information available |
| Dermal exposure: | No information available |
| Inhalation exposure: | No information available |
| Eye exposure: | No information available |

Repeated dose toxicity (subacute, subchronic, chronic)

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | Dose | Exposure time | Species | Method | Evaluation | Note |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Subacute oral | No information available | No information available | No information available | No information available | No information available | - |
| Subacute dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Chronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Chronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | No information available | No information available | No information available | - |

| Specific target organ toxicity – repeated exposure (STOT RE): | | | |
|---|--------------------------|--------------------------|------|
| | Specific effects | Target organ | Note |
| Subacute oral | No information available | No information available | - |
| Subacute dermal | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | - |
| Subchronic oral | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | - |
| Chronic oral | No information available | No information available | - |
| Chronic dermal | No information available | No information available | - |

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | | | |
|--------------------|---|---|---|
| Chronic inhalation | No information available | No information available | - |
| | | | |
| | CMR effects (carcinogenicity, mutagenicity, reproductive toxicity) | | |
| | Carcinogenicity: | Based on available data, the classification criteria are not met. | |
| | Mutagenicity <i>in-vitro</i> : | Based on available data, the classification criteria are not met. | |
| | Genotoxicity: | Based on available data, the classification criteria are not met. | |
| | Mutagenicity <i>in-vivo</i> : | Based on available data, the classification criteria are not met. | |
| | Germ cell mutagenicity: | Based on available data, the classification criteria are not met. | |
| | Reproductive toxicity: | Based on available data, the classification criteria are not met. | |
| | | | |
| | Summary of evaluation of the CMR properties: | - | |
| | | | |
| 11.2 | Information on other hazards: | | |
| 11.2.1. | Endocrine disrupting properties: | | |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. | | |
| 11.2.2. | Other informations: | | |
| | - | | |

| SECTION 12. Ecological information | | | | | | |
|------------------------------------|------------------|---------------|--------------------------|--------------------------|------------|------|
| 12.1. | Toxicity | | | | | |
| Acute toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | No information available | No information available | - | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | - | - |
| Algae/aquatic plants | IC ₅₀ | 8 days | No information available | No information available | - | - |
| Microorganisms | LC ₅₀ | 72 hours | - | - | - | - |

| | | | | | | |
|---------------|--|----------------------|-------------|----------|---|--|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 | |

| Chronic toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
|----------------------|------------------|---------------|--------------------------|--------------------------|--------------------------|------|
| Fish | LC ₅₀ | 96 hours | No information available | No information available | No information available | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | No information available | - |
| Algae/aquatic plants | IC ₅₀ | 72 hours | No information available | No information available | No information available | - |
| Other organisms | - | - | - | - | - | - |

| | |
|--|--|
| | |
|--|--|

12.2. Persistence and degradability

| | |
|--|---------------------|
| | Abiotic degradation |
|--|---------------------|

| | Degradation half-lives | Method | Evaluation | Note |
|--------------|--------------------------|--------------------------|--------------------------|------|
| Marine water | No information available | No information available | No information available | - |
| Fresh water | No information available | No information available | No information available | - |
| Air | No information available | No information available | No information available | - |
| Soil | No information available | No information available | No information available | - |

| | |
|--|--|
| | |
|--|--|

| | |
|--|----------------|
| | Biodegradation |
|--|----------------|

| % Degradation | Time (days) | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |

| | |
|--|--|
| | |
|--|--|

12.3. Bioaccumulative potential

| | |
|--|--|
| | Partition coefficient: n-octanol/water (log K _{ow}): |
|--|--|

| Value | Concentration | pH | °C | Method | Evaluation | Note |
|-------|--------------------------|----|----|--------------------------|--------------------------|------|
| - | No information available | - | - | No information available | No information available | - |
| | | | | | | |

| | |
|--|--|
| | |
|--|--|

| | |
|--|-------------------------------|
| | Bioconcentration factor (BCF) |
|--|-------------------------------|

| | | | | | |
|---------------|--|----------------------|-------------|----------|---|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| Value | Species | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

| Chronic ecotoxicity | | | | | | |
|--|------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Value | Dose | Exposure time | Species | Method | Evaluation | Note |
| Chronic toxicity on fish | LC ₅₀ | No information available | No information available | No information available | No information available | - |
| Chronic toxicity on crustacea (<i>Daphnia</i>) | EC ₅₀ | No information available | No information available | No information available | No information available | - |

| | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|------|--|
| 12.4. Mobility in soil | | | | | | |
| Known or predicted distribution in environmental compartments: | | | | | | |
| No information available | | | | | | |
| Surface tension: | | | | | | |
| | Value | °C | Concentration | Method | Note | |
| | No information available | No information available | No information available | No information available | - | |
| | | | | | | |
| | | | | | | |

| Adsorption / desorption | | | | | | |
|-------------------------|-------------------------------------|-------------|--------------------------|--------------------------|--------------------------|------|
| Transport | A/D coefficient Henry's constant | | log Kow | Evaporation rate | Method | Note |
| Soil-water | No information available | information | No information available | No information available | No information available | - |
| Water-air | No information available | information | No information available | No information available | No information available | - |
| Soil-air | No information available | information | No information available | No information available | No information available | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|--|---|
| 12.5. | Results of PBT and vPvB assessment |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
| 12.6. | Endocrine disrupting properties |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
| 12.7. | Other adverse effects |
| | No information available |
| SECTION 13. Disposal considerations | |
| 13.1. | Waste treatment methods |
| 13.1.1. | Product/Packaging disposal: |
| | Submit for disposal to the legal person authorized by the Ministry of Environmental and Nature Protection. |
| 13.1.2. | Waste codes/waste designations according to Law: |
| | No information available |
| 13.1.3. | Waste treatment – relevant information: |
| | No information available |
| 13.1.4. | Sewage disposal – relevant information: |
| | Waste must not be disposed of into the sewage system. |
| 13.1.5. | Other disposal recommendations: |
| | Do not dispose of the product's remains into the sewage system. Submit the remains to the collectors authorized by the ministry in charge. Do not dispose of the packaging into the sewage system. Submit the packaging to the collectors authorized by the ministry in charge. Do not dispose of in places where ignition may occur. |
| 13.1.6. | Relevant Community provisions: |
| | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| SECTION 14. Transport information | |
|---|---------------------------------------|
| Transporting/shipment by road (ADR) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by rail (RID) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Inland waterway transport (ADN) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by sea (IMDG) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by air (ICAO-TI/IATA-DGR) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|-------------------------------|---|
| Special precautions for user: | - |
| Further information: | - |

| SECTION 15. Regulatory information | | |
|------------------------------------|--|--|
| 15.1. | Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| | EU regulations | |
| | Authorization and/or restrictions of use | |
| | Authorizations: | - |
| | Restrictions: | - |
| | Other EU regulations: | <p>Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;</p> <p>Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC;</p> <p>Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work;</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;</p> <p>REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII);</p> |
| | Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline) | |
| | National legislation: | <p>Chemicals Act, Regulation on classification, packaging and labeling of dangerous substances, Ordinance on occupational exposure limit values and on biological limit values, Regulation on categories, types and classification of waste with a waste catalog and list of hazardous waste, Ordinance on writing Material safety data sheet, Transport of Hazardous Substances Act</p> |
| 15.2. | Chemical safety assessment | |
| | None | |

| SECTION 16. Other information | | |
|-------------------------------|------------------------|---|
| 16.1. | Indication of changes: | - |

| | | | | |
|---------------|--|----------------------|-------------|------------|
| Trading name: | SODIUM THIOSULFATE, 5% SOLUTION | | | |
| Product code: | NT5-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|----------------|---|---|
| 16.2. | Abbreviations and acronyms: | <p>ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>IATA: International Air Transport Association</p> <p>GHS: Globally Harmonised System of Classification and Labelling of Chemicals</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>CAS: Chemical Abstracts Service (division of the American Chemical Society)</p> <p>DNEL: Derived No-Effect Level (UK REACH)</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>PBT: Persistent, Bioaccumulative and Toxic</p> <p>vPvB: very Persistent and very Bioaccumulative</p> |
| 16.3. | Key literature references and source of data: | - |
| 16.4. | Classification and procedure used to derive the classification for mixture according to Regulation (EC) 1272/2008 (CLP) | |
| Classification | | Classification procedure |
| - | | - |
| 16.5. | Relevant H statements (number and full text) | |
| | H: - | - |
| 16.6. | Training advice: | - |
| 16.7. | Further information: | <p>** "X" in the product code marks different volumes (different packagings of the product)</p> <p>We are not responsible for consequences in case of failure to comply with instructions for use or improper use of the product described in this material safety data sheet.</p> |

| |
|--|
| ANNEX: |
| Exposure scenario resulting to Chemical safety assessment |
| - |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| SECTION 1. Identification of the substance/mixture and of the company/undertaking | | |
|---|---|---|
| 1.1. | Product identifier | |
| | Trading name: | SULFURIC ACID, 3% SOLUTION |
| | Chemical name: | - |
| | Catalogue number: | SK3-OT-X** |
| 1.2. | Relevant identified uses of the substance or mixture and uses advised against | |
| | Uses: | For use with special staining kits. |
| | Uses advised against: | Only the identified uses are advised. |
| | Reason why uses advised against: | The product is intended for use only as an <i>in vitro</i> diagnostic medical device, registered at the Agency for Medicinal Products and Medical Devices and there is no reason to use it for other purposes |
| 1.3. | Details of the supplier of the safety data sheet | |
| | Supplier: | BioGnost Ltd. |
| | Address: | Medjugorska 59, Zagreb |
| | Telephone number: | +385 1 2409997 |
| | Fax no.: | +385 1 2404039 |
| | e-mail of competent person: | msds@biognost.hr |
| | National contact: | - |
| 1.4. | Emergency telephone number | |
| | National Protection and Rescue Directorate: | 112 |
| | Medical information: | +385 1 2348 342 |
| | Other information: | - |

| SECTION 2. Hazards identification | | |
|--|--|----------------------------|
| 2.1. | Classification of the substance or mixture | |
| 2.1.1. | Classification according to Regulation (EC) No 1272/2008 (CLP) | |
| | Hazard class and category code: | Hazard statements*: |
| | Not identified as hazardous substance. | - |
| 2.1.2. | Additional information | |
| | - | |
| *For full text of Hazard- and EU Hazard-statements: see Section 16 | | |
| 2.2. | Label elements | |
| | Product identification: | SULFURIC ACID, 3% SOLUTION |
| | Identification number: | - |
| | Authorization no.: | - |
| | Hazard pictograms: | - |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|------|--|---|
| | Signal word: | - |
| | Hazard statements: | - |
| | Precautionary statements: | - |
| | Further information: | - |
| 2.3. | Other hazards | |
| | Endocrine Disrupting Properties: No known endocrine disrupting properties Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB. | |

| SECTION 3. Composition/information on ingredients | | | | |
|---|--------------------------|--------------------------------|---------------------|--|
| CAS/ EC/ Index no. | REACH Registration No | Weight % content (or range) | Identification name | Classification according to Regulation (EC) No 1272/2008 (CLP) |
| 7664-93-9/ 231-639-5/ 016-020-00-8 | - | 3 % | sulfuric acid, 96% | Skin Corr. 1A; H314 |

| SECTION 4. First aid measures | | |
|-------------------------------|---|---|
| 4.1. | Description of first aid measures | |
| | General notes: | - |
| | Following inhalation: | Carry the afflicted person out of the contaminated area into a well-ventilated area or out for fresh air. If breathing becomes erratic or it stops, immediately apply artificial respiration (other than mouth-to-mouth) and contact a physician. |
| | Following skin contact: | Remove contaminated clothing. Immediately wash with plenty of water and soap. Seek medical assistance if the symptoms of irritation remain. |
| | Following eye contact: | Rinse out with plenty of water with the eyelid held wide open using clean fingers. If the symptoms remain, immediately call a physician. |
| | Following ingestion: | Do not induce vomiting. Make the afflicted person drink a glass of water. If spontaneous vomiting occurs, wash the mouth with water, then make the person drink 100-200 ml of water and seek medical attention. |
| | Self-protection of the first aider: | Treat symptomatically. |
| 4.2. | Most important symptoms and effects, both acute and delayed | |
| | Following inhalation: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| | Following skin contact: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|------|--|--|
| | Following eye contact: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| | Following ingestion: | According to our findings, chemical, physical and toxicological properties of the substance have not been entirely tested. |
| 4.3. | Indication of any immediate medical attention and special treatment needed | |
| | - | |

| SECTION 5. Firefighting measures | | |
|----------------------------------|---|---|
| 5.1. | Extinguishing media | |
| | Suitable extinguishing media: | Small fire - water spray, dry powder, CO ₂ Large fire - water spray or alcohol-resistant foam |
| | Unsuitable extinguishing media: | water jet |
| 5.2. | Special hazards arising from the substance or mixture | |
| | Hazardous combustion products: | No information available |
| 5.3. | Advice for firefighters | |
| | Use a self-contained open-circuit compressed air breathing apparatus and fireproof clothing. Cool closed containers exposed to fire with water spray or vapor. | |
| 5.4. | Additional information | |
| | Remove sources of heat and ignition. Do not contaminate the environment with extinguishing media. | |

| SECTION 6. Accidental release measures | | |
|--|---|--|
| 6.1. | Personal precautions, protective equipment and emergency procedures | |
| 6.1.1. | For non-emergency personnel | |
| | Protective equipment: | Use personal protective equipment (see Section 8). |
| | Accident prevention methods: | Evacuate members of all non-essential personnel and those members without protective equipment. Remove all sources of sparks and ignition. Do not smoke. |
| | Emergency procedures: | Mark the area using proper signs. |
| 6.1.2. | For emergency responders: | |
| | Wear protective equipment (see Section 8). | |
| 6.2. | Environmental precautions: | |
| | Do not dispose of in sewage, drainage system and waterways. In case of large spillage contact National Protection and Rescue Directorate (NPRD) on 112. | |
| 6.3. | Methods and material for containment and cleaning up | |
| 6.3.1. | Bundling, covering of drains; capping procedures: | Sand or clay barriers. |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|--------|-----------------------------|---|
| 6.3.2. | Cleaning up: | Where possible, the substance can be absorbed by using inflammable material (sand, diatomaceous earth, vermiculite). Place the waste material in tightly closed impermeable containers. Store the substance in well ventilated storage rooms until disposal. Submit for disposal to the legal persons authorized by the Ministry of Environmental and Nature Protection. After disposal of the products, wash the area and involved materials with water. |
| 6.3.3. | Other information: | - |
| 6.4. | Reference to other sections | |
| | - | |

| SECTION 7. Handling and storage | | |
|---------------------------------|--|---|
| 7.1. | Precautions for safe handling | |
| 7.1.1. | Protection measures | |
| | Measures to prevent fire: | Keep away from sources of heat and ignition. Do not smoke. |
| | Measures to prevent aerosol and dust generation: | Secure proper ventilation. |
| | Measures to protect the environment: | Prevent spilling into the sewage system and waterways. |
| | Other measures: | - |
| 7.1.2. | Advice on general occupational hygiene: | |
| | Do not eat, drink or smoke in the workspace. Thoroughly wash hands after work and before eating. | |
| 7.2. | Conditions for safe storage, including any incompatibilities | |
| | Technical measures and storage conditions: | Keep in tightly closed and upright set containers in a well ventilated storage rooms, and away from sources of heat, sunlight, and other incompatible substances. |
| | Packaging materials: | Manufacturer's original packaging. |
| | Requirements for storage rooms and vessels: | Keep away from food and drink. Keep the containers tightly closed. |
| | Advices for storage equipment: | The storage must be made of hard material; floors must be resistant to chemicals. There must be no drain that directly leads into sewage system. Secure proper ventilation. |
| | Further information on storage conditions: | Do not place the unused material in the storage room and do not use empty containers for storing other chemicals. Do not store with incompatible materials (see Section 9). |
| 7.3. | Specific end use(s) | |
| | Recommendations: | - |
| | Industrial sector specific solutions: | - |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| SECTION 8. Exposure controls/personal protection | | | | |
|--|--------------------|--|----------------------|--------------------------|
| 8.1. | Control parameters | | | |
| Substance | CAS No | Occupational exposure limit values/short term values | | Biological limit values |
| | | ppm | mg/m ³ | |
| - | - | - | - | No information available |
| | | | | |
| Substance name: | - | | | |
| EC No: | - | CAS No: | - | |
| DNEL | | | | |
| Industrial | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |
| Critical physical parameters: solubility, flammability, corrosivity: | | | - | |
| Consumer | | | | |
| Route of exposure: | Acute effect local | Acute effect systemic | Chronic effect local | Chronic effect systemic |
| Oral | - | - | - | - |
| Inhalation | - | - | - | - |
| Dermal | - | - | - | - |
| PNEC | | | | |
| Environmental protection target | | PNEC | | |
| Fresh water | | No information available | | |
| Freshwater sediments | | No information available | | |
| Marine water | | No information available | | |
| Marine sediments | | No information available | | |
| Food chain | | No information available | | |
| Microorganisms in sewage treatment | | No information available | | |
| Soil (agricultural) | | No information available | | |
| Air | | No information available | | |
| | | | | |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|----------|--|--|
| 8.2. | Exposure controls | |
| 8.2.1. | Engineering measures | |
| | Substance/mixture related measures to prevent exposure during identified uses: | Use the product in well ventilated rooms. Use personal protective equipment. Do not eat, drink or smoke in the workspace. |
| | Structural measures to prevent exposure: | No information available |
| | Organisational measures to prevent exposure: | Organization of work in order to reduce other worker's influence during work process. |
| | Technical measures to prevent exposure: | Secure proper workspace ventilation in order to keep concentration levels in air below permitted levels. |
| 8.2.2. | Personal protection equipment | |
| 8.2.2.1. | Eye and face protection: | Safety glasses that stick to face (preventing splashing) (EN 166) or visor. |
| 8.2.2.2. | Skin protection | |
| | Hand protection: | Protective gloves must be according to the EU Directive 2016/425/EEC and standard EN 374. Glove material: nitrile rubber Glove thickness: ≥0.50 mm Break through time: >480 min |
| | Other skin protection: | Wear antistatic clothing made of natural fibers (such as cotton) with long sleeves (EN 13034), and shoes that cover the entire foot (EN 10335). |
| 8.2.2.3. | Respiratory protection: | Protective full face mask (EN 136) or half mask (EN 140) equipped with a filter for organic vapors, type "A" (boiling point >65°C) according to EN 14387) used when concentration levels exceed GVI. |
| 8.2.2.4. | Thermal hazards: | No information available |
| 8.2.3. | Environmental exposure controls | |
| | Substance/mixture related measures to prevent exposure: | See Section 6 |
| | Structural measures to prevent exposure: | Use modern equipment. |
| | Organisational measures to prevent exposure: | Adapt the work process to the required working conditions of the workplace. |
| | Technical measures to prevent exposure: | See Section 6 |

| SECTION 9. Physical and chemical properties | | | |
|---|---|-------|--------|
| 9.1. | Information on basic physical and chemical properties | | |
| | | Value | Method |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | | |
|------|---|--------------------------|--------------------------|
| | Physical state: | liquid | No information available |
| | Colour: | colourless | No information available |
| | Odour/odour threshold: | no information available | No information available |
| | Melting point / freezing point: | No information available | No information available |
| | Boiling point or initial boiling point and boiling range: | No information available | No information available |
| | Flammability: | No information available | No information available |
| | Lower and upper explosion limit: | No information available | No information available |
| | Flash point: | No information available | No information available |
| | Auto-ignition temperature: | No information available | No information available |
| | Decomposition temperature: | No information available | No information available |
| | pH: | No information available | No information available |
| | Kinematic viscosity: | No information available | No information available |
| | Solubility: | No information available | No information available |
| | Partition coefficient n-octanol/water (log value): | No information available | No information available |
| | Vapour pressure: | No information available | No information available |
| | Density and/or relative density: | No information available | No information available |
| | Relative vapour density: | No information available | No information available |
| | Particle characteristics: | No information available | No information available |
| 9.2. | Other information | | |
| | - | | |

| SECTION 10. Stability and reactivity | | |
|--------------------------------------|-------------------------------------|--|
| 10.1. | Reactivity: | See subsections 10.3 through 10.5. |
| 10.2. | Chemical stability: | The product is chemically stable under standard ambient conditions of storing and using. |
| 10.3. | Possibility of hazardous reactions: | No information available |
| 10.4. | Conditions to avoid: | No information available |
| 10.5. | Incompatible materials: | No information available |
| 10.6. | Hazardous decomposition products: | No information available |

| SECTION 11. Toxicological information | |
|---------------------------------------|--|
| 11.1. | Information on hazard classes as defined in Regulation (EC) No 1272/2008 |
| | Acute toxicity: |

| | | | | | |
|---------------|-----------------------------------|----------------------|-------------|----------|---|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| Route of exposure: | Method | Species | Effective dose LD ₅₀ /LC ₅₀ or ATE _{mixture} | Exposure time | Results |
|----------------------|--------------------------|---------|--|---------------|---------|
| Oral exposure: | No information available | - | LD ₅₀ | - | - |
| Dermal exposure: | No information available | - | LD ₅₀ | - | - |
| Inhalation exposure: | No information available | - | LC ₅₀ | - | - |

Specific target organ toxicity – single exposure (STOT SE):

| | Specific effects | Target organ | Note |
|----------------------|--------------------------|--------------------------|------|
| Oral exposure: | No information available | No information available | - |
| Dermal exposure: | No information available | No information available | - |
| Inhalation exposure: | No information available | No information available | - |

Respiratory irritation: No information available

Irritation and corrosion

| | Exposure time | Species | Evaluation | Method | Note |
|------------------|---------------|---------|------------|--------|------|
| Skin irritation: | - | - | - | - | - |
| Eye irritation: | - | - | - | - | - |

Sensitization

| | |
|----------------------|--------------------------|
| Dermal exposure: | No information available |
| Inhalation exposure: | No information available |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|----------------------|--------------------------|
| Oral exposure: | No information available |
| Dermal exposure: | No information available |
| Inhalation exposure: | No information available |
| Eye exposure: | No information available |

Repeated dose toxicity (subacute, subchronic, chronic)

| | | | | | |
|---------------|-----------------------------------|----------------------|-------------|----------|---|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | Dose | Exposure time | Species | Method | Evaluation | Note |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Subacute oral | No information available | No information available | No information available | No information available | No information available | - |
| Subacute dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | No information available | No information available | No information available | - |
| Chronic oral | No information available | No information available | No information available | No information available | No information available | - |
| Chronic dermal | No information available | No information available | No information available | No information available | No information available | - |
| Chronic inhalation | No information available | No information available | No information available | No information available | No information available | - |

| | | | | | | |
|---|--|--|--|--|--|--|
| Specific target organ toxicity – repeated exposure (STOT RE): | | | | | | |
|---|--|--|--|--|--|--|

| | Specific effects | Target organ | Note |
|-----------------------|--------------------------|--------------------------|------|
| Subacute oral | No information available | No information available | - |
| Subacute dermal | No information available | No information available | - |
| Subacute inhalation | No information available | No information available | - |
| Subchronic oral | No information available | No information available | - |
| Subchronic dermal | No information available | No information available | - |
| Subchronic inhalation | No information available | No information available | - |
| Chronic oral | No information available | No information available | - |
| Chronic dermal | No information available | No information available | - |

| | | | | | |
|---------------|-----------------------------------|----------------------|-------------|----------|---|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| | | | |
|--------------------|---|---|---|
| Chronic inhalation | No information available | No information available | - |
| | | | |
| | CMR effects (carcinogenicity, mutagenicity, reproductive toxicity) | | |
| | Carcinogenicity: | Based on available data, the classification criteria are not met. | |
| | Mutagenicity <i>in-vitro</i> : | Based on available data, the classification criteria are not met. | |
| | Genotoxicity: | Based on available data, the classification criteria are not met. | |
| | Mutagenicity <i>in-vivo</i> : | Based on available data, the classification criteria are not met. | |
| | Germ cell mutagenicity: | Based on available data, the classification criteria are not met. | |
| | Reproductive toxicity: | Based on available data, the classification criteria are not met. | |
| | | | |
| | Summary of evaluation of the CMR properties: | - | |
| | | | |
| 11.2 | Information on other hazards: | | |
| 11.2.1. | Endocrine disrupting properties: | | |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. | | |
| 11.2.2. | Other informations: | | |
| | - | | |

| SECTION 12. Ecological information | | | | | | |
|------------------------------------|------------------|---------------|--------------------------|--------------------------|------------|------|
| 12.1. | Toxicity | | | | | |
| Acute toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
| Fish | LC ₅₀ | 96 hours | No information available | No information available | - | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | - | - |
| Algae/aquatic plants | IC ₅₀ | 8 days | No information available | No information available | - | - |
| Microorganisms | LC ₅₀ | 72 hours | - | - | - | - |

| | | | | | |
|---------------|-----------------------------------|----------------------|-------------|----------|---|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| Chronic toxicity | Dose | Exposure time | Species | Method | Evaluation | Note |
|----------------------|------------------|---------------|--------------------------|--------------------------|--------------------------|------|
| Fish | LC ₅₀ | 96 hours | No information available | No information available | No information available | - |
| Crustacea: | EC ₅₀ | 48 hours | No information available | No information available | No information available | - |
| Algae/aquatic plants | IC ₅₀ | 72 hours | No information available | No information available | No information available | - |
| Other organisms | - | - | - | - | - | - |

12.2. Persistence and degradability

Abiotic degradation

| | Degradation half-lives | Method | Evaluation | Note |
|--------------|--------------------------|--------------------------|--------------------------|------|
| Marine water | No information available | No information available | No information available | - |
| Fresh water | No information available | No information available | No information available | - |
| Air | No information available | No information available | No information available | - |
| Soil | No information available | No information available | No information available | - |

Biodegradation

| % Degradation | Time (days) | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |

12.3. Bioaccumulative potential

Partition coefficient: n-octanol/water (log K_{ow}):

| Value | Concentration | pH | °C | Method | Evaluation | Note |
|-------|--------------------------|----|----|--------------------------|--------------------------|------|
| - | No information available | - | - | No information available | No information available | - |
| | | | | | | |

Bioconcentration factor (BCF)

| | | | | | |
|---------------|-----------------------------------|----------------------|-------------|----------|---|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: | 4 |

| Value | Species | Method | Evaluation | Note |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| No information available | No information available | No information available | No information available | No information available |
| | | | | |
| | | | | |

| Chronic ecotoxicity | | | | | | |
|--|------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| Value | Dose | Exposure time | Species | Method | Evaluation | Note |
| Chronic toxicity on fish | LC ₅₀ | No information available | No information available | No information available | No information available | - |
| Chronic toxicity on crustacea (<i>Daphnia</i>) | EC ₅₀ | No information available | No information available | No information available | No information available | - |

| | | | | | |
|------------------------|--|--------------------------|--------------------------|--------------------------|------|
| 12.4. Mobility in soil | | | | | |
| | Known or predicted distribution in environmental compartments: | | | | |
| | No information available | | | | |
| | Surface tension: | | | | |
| | Value | °C | Concentration | Method | Note |
| | No information available | No information available | No information available | No information available | - |
| | | | | | |
| | | | | | |

| | | | | | | |
|------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | Adsorption / desorption | | | | | |
| Transport | A/D coefficient Henry's constant | | log Kow | Evaporation rate | Method | Note |
| Soil-water | No information available | No information available | No information available | No information available | No information available | - |
| Water-air | No information available | No information available | No information available | No information available | No information available | - |
| Soil-air | No information available | No information available | No information available | No information available | No information available | - |
| | | | | | | |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|--|---|
| 12.5. | Results of PBT and vPvB assessment |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
| 12.6. | Endocrine disrupting properties |
| | The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. |
| 12.7. | Other adverse effects |
| | No information available |
| SECTION 13. Disposal considerations | |
| 13.1. | Waste treatment methods |
| 13.1.1. | Product/Packaging disposal: |
| | Submit for disposal to the legal person authorized by the Ministry of Environmental and Nature Protection. |
| 13.1.2. | Waste codes/waste designations according to Law: |
| | No information available |
| 13.1.3. | Waste treatment – relevant information: |
| | No information available |
| 13.1.4. | Sewage disposal – relevant information: |
| | Waste must not be disposed of into the sewage system. |
| 13.1.5. | Other disposal recommendations: |
| | Do not dispose of the product's remains into the sewage system. Submit the remains to the collectors authorized by the ministry in charge. Do not dispose of the packaging into the sewage system. Submit the packaging to the collectors authorized by the ministry in charge. Do not dispose of in places where ignition may occur. |
| 13.1.6. | Relevant Community provisions: |
| | - |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| SECTION 14. Transport information | |
|---|---------------------------------------|
| Transporting/shipment by road (ADR) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by rail (RID) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Inland waterway transport (ADN) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by sea (IMDG) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |
| Special precautions for user: | - |
| Transporting/shipment by air (ICAO-TI/IATA-DGR) | |
| UN number: | Not subject to transport regulations. |
| UN proper shipping name: | - |
| Transport hazard class(es): | - |
| Packing group: | - |
| Environmentally hazardous: | - |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | |
|-------------------------------|---|
| Special precautions for user: | - |
| Further information: | - |

| SECTION 15. Regulatory information | | |
|---|--|--|
| 15.1. | Safety, health and environmental regulations/legislation specific for the substance or mixture | |
| | EU regulations | |
| | Authorization and/or restrictions of use | |
| | Authorizations: | - |
| | Restrictions: | - |
| | Other EU regulations: | <p>Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;</p> <p>Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC;</p> <p>Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work;</p> <p>Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;</p> <p>REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII);</p> |
| | Information according 1999/13/EC about limitation of emissions of volatile organic compounds (VOC-guideline) | |
| | National legislation: | <p>Chemicals Act, Regulation on classification, packaging and labeling of dangerous substances, Ordinance on occupational exposure limit values and on biological limit values, Regulation on categories, types and classification of waste with a waste catalog and list of hazardous waste, Ordinance on writing Material safety data sheet, Transport of Hazardous Substances Act</p> |
| 15.2. | Chemical safety assessment | |
| | None | |

| SECTION 16. Other information | | |
|--------------------------------------|------------------------|---|
| 16.1. | Indication of changes: | - |

| | | | | |
|---------------|-----------------------------------|----------------------|-------------|------------|
| Trading name: | SULFURIC ACID, 3% SOLUTION | | | |
| Product code: | SK3-OT-X** | Date of compilation: | 21 Dec 2022 | Version: 4 |

| | | |
|----------------|---|---|
| 16.2. | Abbreviations and acronyms: | <p>ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>IATA: International Air Transport Association</p> <p>GHS: Globally Harmonised System of Classification and Labelling of Chemicals</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>CAS: Chemical Abstracts Service (division of the American Chemical Society)</p> <p>DNEL: Derived No-Effect Level (UK REACH)</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>PBT: Persistent, Bioaccumulative and Toxic</p> <p>vPvB: very Persistent and very Bioaccumulative</p> |
| 16.3. | Key literature references and source of data: | - |
| 16.4. | Classification and procedure used to derive the classification for mixture according to Regulation (EC) 1272/2008 (CLP) | |
| Classification | | Classification procedure |
| - | | - |
| 16.5. | Relevant H statements (number and full text) | |
| | H: 314 | Causes severe skin burns and eye damage. |
| 16.6. | Training advice: | - |
| 16.7. | Further information: | <p>** "X" in the product code marks different volumes (different packagings of the product)</p> <p>We are not responsible for consequences in case of failure to comply with instructions for use or improper use of the product described in this material safety data sheet.</p> |

| |
|--|
| ANNEX: |
| Exposure scenario resulting to Chemical safety assessment |
| - |