# Aro-Bond 533 (Aro-Bond DX5941)

## Ureka Global Ltd

Chemwatch Hazard Alert Code: **2**

Version No: **3.6**
Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Issue Date: **08/03/2023**
Print Date: **08/03/2023**
S.REACH.GB.EN

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

### 1.1. Product Identifier

| | |
|---|---|
| **Product name** | Aro-Bond 533 (Aro-Bond DX5941) |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | UFI:12FH-U08M-500D-9EUD |

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

| | | |
|---|---|---|
| **Chemical Product Category** | PC1 | Adhesives, sealants |
| **Sectors of Use** | SU3 | Industrial uses: Uses of substances as such or in preparations* at industrial sites |
| **Relevant identified uses** | Use according to manufacturer's directions. | |
| **Uses advised against** | No specific uses advised against are identified. | |

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

| | |
|---|---|
| **Registered company name** | **Ureka Global Ltd** |
| **Address** | Unit 5 Decoypool Road, St Modwen Park, Newport, NP19 4RG United Kingdom |
| **Telephone** | +44 (0)117 971 1364 |
| **Fax** | Not Available |
| **Website** | www.thenamethatsticks.com |
| **Email** | sales@thenamethatsticks.com |

### 1.4. Emergency telephone number

| | |
|---|---|
| **Association / Organisation** | **Not Available** |
| **Emergency telephone numbers** | Not Available |
| **Other emergency telephone numbers** | Not Available |

## SECTION 2 Hazards identification

### 2.1. Classification of the substance or mixture

| | |
|---|---|
| **Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]** | H319 - Serious Eye Damage/Eye Irritation Category 2 |
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567* |

### 2.2. Label elements

| | |
|---|---|
| **Hazard pictogram(s)** | |

**Page 1 continued...**

| | |
|---|---|
| **Signal word** | **Warning** |

**Hazard statement(s)**

| | |
|---|---|
| **H319** | Causes serious eye irritation. |

**Supplementary Phrases**

| | |
|---|---|
| **EUH208** | Contains formaldehyde, 1,2-benzisothiazoline-3-one, 5-chloro-2-methyl-4-isothiazolin-3-one. May produce an allergic reaction. |

**Precautionary statement(s) Prevention**

| | |
|---|---|
| **P280** | Wear protective gloves, protective clothing, eye protection and face protection. |
| **P264** | Wash all exposed external body areas thoroughly after handling. |

**Precautionary statement(s) Response**

| | |
|---|---|
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

### 2.3. Other hazards

Cumulative effects may result following exposure*.

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

## SECTION 3 Composition / information on ingredients

### 3.1.Substances

See 'Composition on ingredients' in Section 3.2

### 3.2.Mixtures

| 1.CAS No<br>2.EC No<br>3.Index No<br>4.REACH No | %[weight] | Name | Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 | SCL / M-Factor | Nanoform Particle Characteristics |
|---|---|---|---|---|---|
| 1.52-51-7<br>2.200-143-0<br>3.603-085-00-8<br>4.Not Available | <0.04 | 2-bromo-2-nitropropan-1,3-diol | Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Hazardous to the Aquatic Environment Acute Hazard Category 1; H302, H312, H315, H318, H335, H400, Not Applicable [2] | M=10 | Not Available |
| 1.50-00-0<br>2.200-001-8<br>3.605-001-00-5<br>4.Not Available | <0.03 | formaldehyde | Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 3, Acute Toxicity (Inhalation) Category 3, Skin Corrosion/Irritation Category 1B, Sensitisation (Skin) Category 1, Germ Cell Mutagenicity Category 2, Carcinogenicity Category 1B; H301, H311, H331, H314, H317, H341, H350, Not Applicable [2] | * Skin Corr. 1B; H314: C ≥ 25 % \| Skin Irrit. 2; H315: 5 % ≤ C < 25 % \| Eye Irrit. 2; H319: 5 % ≤ C < 25 % \| STOT SE 3; H335: C ≥ 5 % \| Skin Sens.; H317: C ≥ 0,2 % | Not Available |
| 1.2634-33-5<br>2.220-120-9<br>3.613-088-00-6<br>4.Not Available | <0.02 | 1,2-benzisothiazoline-3-one | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Sensitisation (Skin) Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1; H302, H315, H318, H317, H400, Not Applicable [2] | Skin Sens. 1; H317: C ≥ 0,05 % | Not Available |
| 1.55965-84-9<br>2.247-500-7<br>3.613-167-00-5<br>4.Not Available | <0.0015 | 5-chloro-2-methyl-4-isothiazolin-3-one | Acute Toxicity (Oral) Category 3, Acute Toxicity (Dermal) Category 2, Acute Toxicity (Inhalation) Category 2, Skin Corrosion/Irritation Category 1C, Serious Eye Damage/Eye Irritation Category 1, Sensitisation (Skin) Category 1A, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H301, H310, H330, H314, H318, H317, H400, H410, Not Applicable [2] | Skin Corr. 1C; H314: C ≥ 0,6 % \| Skin Irrit. 2; H315: 0,06 % ≤ C < 0,6 % \| Eye Dam. 1; H318: C ≥ 0,6 % \| Eye Irrit. 2; H319: 0,06 % ≤ C < 0,6 % \| Skin Sens. 1A; H317: C ≥ 0,0015 % \| M=100 \| M=100 | Not Available |
| 1.124-17-4<br>2.204-685-9<br>3.Not Available<br>4.Not Available | 1-5 | diethylene glycol monobutyl ether acetate | EUH019 [1] | Not Available | Not Available |

**Continued...**

| 1.CAS No<br>2.EC No<br>3.Index No<br>4.REACH No | %[weight] | Name | Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 | SCL / M-Factor | Nanoform Particle Characteristics |
|---|---|---|---|---|---|
| 1.1327-41-9<br>2.215-477-2<br>3.Not Available<br>4.Not Available | 1-5 | aluminium hydroxide chloride | Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H315, H319, H410, EUH201 [1] | Not Available | Not Available |
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties* | | | | |

## SECTION 4 First aid measures

### 4.1. Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes or combustion products are inhaled remove from contaminated area.<br>▸ Lay patient down. Keep warm and rested.<br>▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.<br>▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.<br>▸ Transport to hospital, or doctor, without delay. |
| **Ingestion** | ▸ Immediately give a glass of water.<br>▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

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

See Section 11

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

Treat symptomatically.

## SECTION 5 Firefighting measures

### 5.1. Extinguishing media

▸ There is no restriction on the type of extinguisher which may be used.
▸ Use extinguishing media suitable for surrounding area.

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

### 5.3. Advice for firefighters

## SECTION 6 Accidental release measures

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

See section 8

### 6.2. Environmental precautions

See section 12

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

### 6.4. Reference to other sections

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

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Avoid all personal contact, including inhalation.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ **DO NOT** allow clothing wet with material to stay in contact with skin |

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

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container. |

**Continued...**

| | |
|---|---|
| | ▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Hazard categories in accordance with Regulation (EC) No 1272/2008** | Not Available |
| **Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of** | Not Available |

### 7.3. Specific end use(s)

See section 1.2

## SECTION 8 Exposure controls / personal protection

### 8.1. Control parameters

| Ingredient | DNELs<br>Exposure Pattern Worker | PNECs<br>Compartment |
|---|---|---|
| 2-bromo-2-nitropropan-1,3-diol | Dermal 2 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 3.5 mg/m³ (Systemic, Chronic)<br>Dermal 8 µg/cm² (Local, Chronic)<br>Inhalation 2.5 mg/m³ (Local, Chronic)<br>Dermal 6 mg/kg bw/day (Systemic, Acute)<br>Inhalation 10.5 mg/m³ (Systemic, Acute)<br>Dermal 8 µg/cm² (Local, Acute)<br>Inhalation 2.5 mg/m³ (Local, Acute)<br>*Dermal 0.7 mg/kg bw/day (Systemic, Chronic) **<br>*Inhalation 0.6 mg/m³ (Systemic, Chronic) **<br>*Oral 0.18 mg/kg bw/day (Systemic, Chronic) **<br>*Dermal 4 µg/cm² (Local, Chronic) **<br>*Dermal 2.1 mg/kg bw/day (Systemic, Acute) **<br>*Inhalation 1.8 mg/m³ (Systemic, Acute) **<br>*Oral 0.5 mg/kg bw/day (Systemic, Acute) **<br>*Dermal 4 µg/cm² (Local, Acute) **<br>*Inhalation 0.6 mg/m³ (Local, Acute) ** | 0.01 mg/L (Water (Fresh))<br>0.001 mg/L (Water - Intermittent release)<br>0.003 mg/L (Water (Marine))<br>0.041 mg/kg sediment dw (Sediment (Fresh Water))<br>0.003 mg/kg sediment dw (Sediment (Marine))<br>0.5 mg/kg soil dw (Soil)<br>0.43 mg/L (STP) |
| formaldehyde | Dermal 240 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 9 mg/m³ (Systemic, Chronic)<br>Dermal 37 µg/cm² (Local, Chronic)<br>Inhalation 0.375 mg/m³ (Local, Chronic)<br>Inhalation 0.75 mg/m³ (Local, Acute)<br>*Dermal 102 mg/kg bw/day (Systemic, Chronic) **<br>*Inhalation 3.2 mg/m³ (Systemic, Chronic) **<br>*Oral 4.1 mg/kg bw/day (Systemic, Chronic) **<br>*Dermal 12 µg/cm² (Local, Chronic) **<br>*Inhalation 0.1 mg/m³ (Local, Chronic) ** | 0.44 mg/L (Water (Fresh))<br>0.44 mg/L (Water - Intermittent release)<br>4.44 mg/L (Water (Marine))<br>2.3 mg/kg sediment dw (Sediment (Fresh Water))<br>2.3 mg/kg sediment dw (Sediment (Marine))<br>0.2 mg/kg soil dw (Soil)<br>0.19 mg/L (STP) |
| 1,2-benzisothiazoline-3-one | Dermal 0.966 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 6.81 mg/m³ (Systemic, Chronic)<br>*Dermal 0.345 mg/kg bw/day (Systemic, Chronic) **<br>*Inhalation 1.2 mg/m³ (Systemic, Chronic) ** | 4.03 µg/L (Water (Fresh))<br>0.403 µg/L (Water - Intermittent release)<br>1.1 µg/L (Water (Marine))<br>49.9 µg/kg sediment dw (Sediment (Fresh Water))<br>4.99 µg/kg sediment dw (Sediment (Marine))<br>3 mg/kg soil dw (Soil)<br>1.03 mg/L (STP) |
| 5-chloro-2-methyl-4-isothiazolin-3-one | Inhalation 0.02 mg/m³ (Local, Chronic)<br>Inhalation 0.04 mg/m³ (Local, Acute)<br>*Oral 0.09 mg/kg bw/day (Systemic, Chronic) **<br>*Inhalation 0.02 mg/m³ (Local, Chronic) **<br>*Oral 0.11 mg/kg bw/day (Systemic, Acute) **<br>*Inhalation 0.04 mg/m³ (Local, Acute) ** | 3.39 µg/L (Water (Fresh))<br>3.39 µg/L (Water - Intermittent release)<br>3.39 µg/L (Water (Marine))<br>0.027 mg/kg sediment dw (Sediment (Fresh Water))<br>0.027 mg/kg sediment dw (Sediment (Marine))<br>0.01 mg/kg soil dw (Soil)<br>0.23 mg/L (STP) |
| diethylene glycol monobutyl ether acetate | Dermal 100 mg/kg bw/day (Systemic, Chronic)<br>*Dermal 60 mg/kg bw/day (Systemic, Chronic) **<br>*Oral 7.9 mg/kg bw/day (Systemic, Chronic) ** | 0.108 mg/L (Water (Fresh))<br>0.011 mg/L (Water - Intermittent release)<br>0.6 mg/L (Water (Marine))<br>0.8 mg/kg sediment dw (Sediment (Fresh Water))<br>0.08 mg/kg sediment dw (Sediment (Marine))<br>0.29 mg/kg soil dw (Soil)<br>100 mg/L (STP)<br>70 mg/kg food (Oral) |
| aluminium hydroxide chloride | Dermal 1.94 mg/kg bw/day (Systemic, Chronic)<br>Inhalation 6.8 mg/m³ (Systemic, Chronic)<br>*Dermal 0.97 mg/kg bw/day (Systemic, Chronic) **<br>*Inhalation 1.7 mg/m³ (Systemic, Chronic) **<br>*Oral 1.2 mg/kg bw/day (Systemic, Chronic) ** | Not Available |

* Values for General Population

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| UK Workplace Exposure Limits | formaldehyde | Formaldehyde | 2 ppm / 2.5 mg/m3 | 2.5 mg/m3 / 2 ppm | Not Available | Carc |

**Continued...**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| (WELs). | | | | | | |
| UK Workplace Exposure Limits (WELs). | aluminium hydroxide chloride | Aluminium salts, soluble | 2 mg/m3 | Not Available | Not Available | Not Available |

**Emergency Limits**

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|
| formaldehyde | Not Available | Not Available | Not Available |
| 5-chloro-2-methyl-4-isothiazolin-3-one | 0.6 mg/m3 | 6.6 mg/m3 | 40 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| 2-bromo-2-nitropropan-1,3-diol | Not Available | Not Available |
| formaldehyde | 20 ppm | Not Available |
| 1,2-benzisothiazoline-3-one | Not Available | Not Available |
| 5-chloro-2-methyl-4-isothiazolin-3-one | Not Available | Not Available |
| diethylene glycol monobutyl ether acetate | Not Available | Not Available |
| aluminium hydroxide chloride | Not Available | Not Available |

**Occupational Exposure Banding**

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|---|---|---|
| 2-bromo-2-nitropropan-1,3-diol | E | ≤ 0.01 mg/m³ |
| 1,2-benzisothiazoline-3-one | E | ≤ 0.01 mg/m³ |
| 5-chloro-2-methyl-4-isothiazolin-3-one | E | ≤ 0.01 mg/m³ |
| ***Notes:*** | *Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.* | |

## 8.2. Exposure controls

| | |
|---|---|
| **8.2.1. Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk. |
| **8.2.2. Individual protection measures, such as personal protective equipment** | |
| **Eye and face protection** | ‣ Safety glasses with side shields.<br>‣ Chemical goggles.<br>‣ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. |
| **Skin protection** | See Hand protection below |
| **Hands/feet protection** | ‣ Wear chemical protective gloves, e.g. PVC.<br>‣ Wear safety footwear or safety gumboots, e.g. Rubber<br>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>‣ Butyl rubber gloves<br>· Nitrile rubber gloves (Note: Nitric acid penetrates nitrile gloves in a few minutes.) |
| **Body protection** | See Other protection below |
| **Other protection** | ‣ Overalls.<br>‣ P.V.C apron.<br>‣ Barrier cream. |

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Aro-Bond 533 (Aro-Bond DX5941)

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| NEOPRENE/NATURAL | A |
| NITRILE | A |
| PE | A |
| PE/EVAL/PE | A |

Type BAX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | BAX-AUS | - | BAX-PAPR-AUS / Class 1 |
| up to 50 x ES | - | BAX-AUS / Class 1 | - |
| up to 100 x ES | - | BAX-2 | BAX-PAPR-2 ^ |

**Continued...**

| | |
|---|---|
| PVC | A |
| TEFLON | A |
| VITON | A |
| NATURAL RUBBER | B |
| NATURAL+NEOPRENE | B |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

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

| | |
|---|---|
| **Appearance** | White |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Characteristic | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Available |
| **pH (as supplied)** | 3-4 | **Decomposition temperature (°C)** | Not Available |
| **Freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | ca 100 | **Molecular weight (g/mol)** | Not Available |
| **Flash point (°C)** | Not Available | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Available | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Available | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Available | **Volatile Component (%vol)** | Not Available |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water** | Not Available | **pH as a solution (1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |
| **Nanoform Solubility** | Not Available | **Nanoform Particle Characteristics** | Not Available |
| **Particle Size** | Not Available | | |

### 9.2. Other information

Not Available

## SECTION 10 Stability and reactivity

| | |
|---|---|
| **10.1.Reactivity** | See section 7.2 |
| **10.2. Chemical stability** | ▸ Unstable in the presence of incompatible materials.<br>▸ Product is considered stable.<br>▸ Hazardous polymerisation will not occur. |
| **10.3. Possibility of hazardous reactions** | See section 7.2 |
| **10.4. Conditions to avoid** | See section 7.2 |
| **10.5. Incompatible materials** | See section 7.2 |
| **10.6. Hazardous decomposition products** | See section 5.3 |

## SECTION 11 Toxicological information

### 11.1. Information on toxicological effects

| | |
|---|---|
| **Inhaled** | The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.<br>The material has **NOT** been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence. |

**Continued...**

| | |
|---|---|
| | Zirconium workers exposed to fume for 1-5 years showed no abnormalities due to zirconium. Animal studies also reveal a low order of hazard from inhaled zirconium. |
| **Ingestion** | 51alum<br>Because inorganic zirconium is poorly absorbed from the digestive tract, acute oral toxicity is low. Injection is much more dangerous, causing progressive depression until death.<br>The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.<br>Taken by mouth, isothiazolinones have moderate to high toxicity. The major signs of toxicity are severe stomach irritation, lethargy, and inco-ordination. |
| **Skin Contact** | This material can cause inflammation of the skin on contact in some persons.<br>The material may accentuate any pre-existing dermatitis condition<br>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.<br>A 0.5% solution of 1,2-benzisothiazoline-3-one (BIT) is irritating to the skin. Even 0.05% can cause allergy, according to patch tests, with reddening of the skin.<br>Provocation tests with BIT showed the material to be sensitizing.<br>Solutions of isothiazolinones may be irritating or even damaging to the skin, depending on concentration. A concentration of over 0.1% can irritate, and over 0.5% can cause severe irritation.<br>The external application of zirconium can cause nodules in the skin of the armpits.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| **Eye** | This material can cause eye irritation and damage in some persons.<br>Solutions containing isothiazolinones may damage the mucous membranes and cornea. Animal testing showed very low concentrations (under 0.1%) did not cause irritation, while higher levels (3-5.5%) produced severe irritation and damage to the eye. |
| **Chronic** | Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.<br>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.<br>55alum Zirconium can accumulate in the spleen. Oral administration has not been shown to cause any ill effects.<br>In animal testing, 1,2-benzisothiazoline-3-one (BIT) did not cause toxicity to the embryo or birth defects. The material does not cause mutations or an increase in cancer. Mild anaemia, reduction in food intake and changes in organ weights did occur in a long-term study.<br>The isothiazolinones are known contact sensitisers. Sensitisation is more likely with the chlorinated species as opposed to the non-chlorinated species. |

| **Aro-Bond 533 (Aro-Bond DX5941)** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Not Available | Not Available |

| **2-bromo-2-nitropropan-1,3-diol** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| dermal (rat) LD50: ~1600 mg/kg[1] | Eye (rabbit): 5 mg |
| Inhalation(Rat) LC50: >0.12<1.14 mg/l4h[1] | Skin (human): 10 mg moderate |
| Oral (Rat) LD50: 180 mg/kg[2] | Skin (rabbit): 500 mg/24h mild |
| | Skin (rabbit): 80 mg moderate |

| **formaldehyde** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: 270 mg/kg[2] | Eye (human): 4 ppm/5m |
| Inhalation(Rat) LC50: <463 ppm4h[1] | Eye (rabbit): 0.75 mg/24H SEVERE |
| Oral (Rat) LD50: 100 mg/kg[2] | Eye: adverse effect observed (irritating)[1] |
| | Skin (human): 0.15 mg/3d-I mild |
| | Skin (rabbit): 2 mg/24H SEVERE |
| | Skin: adverse effect observed (corrosive)[1] |

| **1,2-benzisothiazoline-3-one** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| dermal (rat) LD50: >2000 mg/kg[1] | Eye: adverse effect observed (irreversible damage)[1] |
| Oral (Rat) LD50: 454 mg/kg[1] | Skin: no adverse effect observed (not irritating)[1] |

| **5-chloro-2-methyl-4-isothiazolin-3-one** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| dermal (rat) LD50: >1008 mg/kg[2] | Eye: adverse effect observed (irreversible damage)[1] |
| Inhalation(Rat) LC50: 1.23 mg/l4h[2] | Skin: adverse effect observed (corrosive)[1] |
| Oral (Rat) LD50: 53 mg/kg[2] | Skin: adverse effect observed (irritating)[1] |

| **diethylene glycol monobutyl ether acetate** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: 14500 mg/kg[2] | Eye (rabbit): 500 mg - moderate |
| Inhalation(Rat) LC50: 72.5 mg/L4h[2] | Eye: no adverse effect observed (not irritating)[1] |
| Oral (Rabbit) LD50; 2260 mg/kg[2] | Skin (rabbit): 500 mg (open)-mild |
| | Skin: no adverse effect observed (not irritating)[1] |

| **aluminium hydroxide chloride** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| dermal (rat) LD50: >2000 mg/kg[1] | Eye: no adverse effect observed (not irritating)[1] |
| Inhalation(Rat) LC50: >5 mg/l4h[1] | Skin: no adverse effect observed (not irritating)[1] |

**Continued...**

| | |
|---|---|
| | Oral (Rat) LD50: >300<2000 mg/kg[1] |
| ***Legend:*** | *1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances* |

| | |
|---|---|
| **ALUMINIUM HYDROXIDE CHLORIDE** | Oral (rat) LD50: 9187 mg/kg [Hoechst] Skin (human) 150 mg/3d-I Mild for RTEC No.: BD 0549500 for RTEC No.: BD 0550000 CAS RN: 12042-91-0 Substance [CAS RN 1327-41-9] has been investigated as a reproductive effector in rats.<br>Aluminium compounds are widely used in antiperspirants without harmful effects to the skin Some people, however, are unusually sensitive to topically applied aluminium compounds. Skin irritation was reported in subjects following the application of aluminium chloride hexahydrate in ethanol used for the treatment of axillary or palmar hyperhidrosis (excessive sweating) or the use of a crystal deodorant containing alum<br>Aluminium in antiperspirants is thought to work by (a) precipitating inside the eccrine sweat ducts as insoluble aluminium hydroxide, and (b) altering sweating by either a direct constrictor effect on the eccrine duct lumen or via an anticholinergic action.<br>For cosmetic uses of aluminium, the majority would be applied in formulations where the aluminium would be insoluble, which means that very little of the applied aluminium might be bioaccessible for skin absorption. The notable exception being antiperspirants where the aluminium is soluble at low pH in the formulation,before being rendered insoluble as it is neutralised by the sweat on the skin s surface and within the sweat ducts.<br>There are limited human data on the dermal absorption of aluminium.<br>As cationic polymers possess unique physical structures and surface properties, various kinds of cationic polymers have been developed over the past few decades for a wide spectrum of nanomedical applications in the central nervous system (CNS). Although cationic polymers could be successfully used for gene transfer, drug delivery, and diagnostic imaging, after entering into the CNS, they may cause neurotoxicity and induce CNS damage, which seriously limits their applications. The neurotoxic effects of cationic polymers on CNS are mostly studied in mice, and have not been examined in detail.<br>While evaluating the neurotoxicity of cationic polymers, the surface charge, surface area, coating, size, shape, and the basic materials that cationic polymers are made up of are expected to show important roles, and should be carefully considered.<br>For aluminium compounds:<br>Aluminium present in food and drinking water is poorly absorbed through the gastrointestinal tract. The bioavailability of aluminium is dependent on the form in which it is ingested and the presence of dietary constituents with which the metal cation can complex Ligands in food can have a marked effect on absorption of aluminium, as they can either enhance uptake by forming absorbable (usually water soluble) complexes (e.g., with carboxylic acids such as citric and lactic), or reduce it by forming insoluble compounds (e.g., with phosphate or dissolved silicate).<br>Considering the available human and animal data it is likely that the oral absorption of aluminium can vary 10-fold based on chemical form alone. Although bioavailability appears to generally parallel water solubility, insufficient data are available to directly extrapolate from solubility in water to bioavailability.<br>For oral intake from food, the European Food Safety Authority (EFSA) has derived a tolerable weekly intake (TWI) of 1 milligram (mg) of aluminium per kilogram of bodyweight. |
| **Aro-Bond 533 (Aro-Bond DX5941) & 2-BROMO-2-NITROPROPAN-1,3-DIOL & FORMALDEHYDE & 5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE** | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. |
| **2-BROMO-2-NITROPROPAN-1,3-DIOL & 5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE & DIETHYLENE GLYCOL MONOBUTYL ETHER ACETATE & ALUMINIUM HYDROXIDE CHLORIDE** | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. |

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

***Legend:*** ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

### 11.2 Information on other hazards

#### 11.2.1. Endocrine disrupting properties

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

#### 11.2.2. Other information

See Section 11.1

## SECTION 12 Ecological information

### 12.1. Toxicity

**Aro-Bond 533 (Aro-Bond DX5941)**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**2-bromo-2-nitropropan-1,3-diol**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| NOEC(ECx) | 72h | Algae or other aquatic plants | 0.01mg/l | 2 |
| LC50 | 96h | Fish | 10.274-14.454mg/L | 4 |
| EC50 | 72h | Algae or other aquatic plants | 0.05mg/l | 2 |

**Continued...**

| | | | | | |
|---|---|---|---|---|---|
| | EC50 | 96h | Algae or other aquatic plants | 0.02-0.025mg/L | 4 |
| | EC50 | 48h | Crustacea | 1.1-3.52mg/L | 4 |

**formaldehyde**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| NOEC(ECx) | 312h | Crustacea | 0.005mg/l | 4 |
| LC50 | 96h | Fish | 0.727-9.193mg/l | 4 |
| EC50 | 72h | Algae or other aquatic plants | 1.034-1.984mg/l | 4 |
| EC50 | 96h | Algae or other aquatic plants | 0.375-0.579mg/l | 4 |
| EC50 | 48h | Crustacea | 3.26mg/l | 4 |

**1,2-benzisothiazoline-3-one**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| NOEC(ECx) | 72h | Algae or other aquatic plants | 0.0403mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | 0.07mg/l | 2 |
| LC50 | 96h | Fish | 0.067-0.29mg/L | 4 |
| EC50 | 48h | Crustacea | 0.097mg/L | 4 |

**5-chloro-2-methyl-4-isothiazolin-3-one**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| NOEC(ECx) | 504h | Crustacea | 0.172mg/l | 1 |
| EC50 | 96h | Algae or other aquatic plants | 0.03-0.13mg/L | 4 |
| EC50 | 72h | Algae or other aquatic plants | 0.018-0.026mg/L | 4 |
| LC50 | 96h | Fish | 0.13-0.31mg/L | 4 |
| EC50 | 48h | Crustacea | 4.71mg/l | 1 |

**diethylene glycol monobutyl ether acetate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | 50mg/l | 1 |
| EC50 | 72h | Algae or other aquatic plants | >500mg/l | 2 |
| EC10(ECx) | 168h | Crustacea | 10.84mg/l | 2 |
| EC50 | 96h | Algae or other aquatic plants | 75mg/l | 2 |

**aluminium hydroxide chloride**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | 3.1mg/l | Not Available |
| EC50 | 72h | Algae or other aquatic plants | 0.0169mg/l | 2 |
| EC50 | 48h | Crustacea | 0.33mg/l | 2 |
| EC10(ECx) | 72h | Algae or other aquatic plants | 0.000203mg/l | 2 |
| EC50 | 96h | Algae or other aquatic plants | 0.0054mg/l | 2 |

***Legend:*** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

For Metal:
Atmospheric Fate - Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air.
Environmental Fate: Environmental processes, such as oxidation, the presence of acids or bases and microbiological processes, may transform insoluble metals to more soluble ionic forms. Environmental processes may enhance bioavailability and may also be important in changing solubilities.
Speciation of arsenic is an important consideration in the fate, movement, and action of this substance. Chemical and biochemical transformations of arsenic include oxidation, reduction and methylation which affects its volatilisation, adsorption, dissolution and biological disposition. The transport of arsenic in the environment is largely controlled by absorption/desorption processes in soils and sediments.
Soluble salts of zirconium are moderately toxic to algae and fish. Zirconium is more toxic in soft water than in hard water. The toxicity of zirconium salts and zirconium complexes with organic acids are expected to be related to their water solubilities and their octanol/ water partition coefficient (Kow).
Environmental Fate: Isothiazolinones are antimicrobials used to control bacteria, fungi, and for wood preservation and antifouling agents. They are frequently used in personal care products such as shampoos and other hair care products, as well as certain paint formulations. The most common isothiazolinone combinations are 5-chloro-2-methyl-4-isothiazolin-3-one, (CMI), and 2-methyl-4-isothiazolin-3-one, (MI).
For Formaldehyde:
Environmental Fate: Formaldehyde is common in the environment as a contaminant of smoke and as photochemical smog. Concentrated solutions containing formaldehyde are unstable and oxidize slowly. In the presence of air and moisture, polymerization takes place readily in concentrated solutions at room temperature to form paraformaldehyde.
For 2-bromo-2-nitropropan-1,3-diol (Bronopol)
**Environmental fate:**
One hydrolysis study indicates that bronopol appears to hydrolyse slowly at acidic or neutral pH conditions. Bronopol decomposes in aqueous solution on exposure to light. Increases in temperature increase decomposition.
**DO NOT** discharge into sewer or waterways.

### 12.2. Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| 2-bromo-2-nitropropan-1,3-diol | LOW | LOW |
| formaldehyde | LOW (Half-life = 14 days) | LOW (Half-life = 2.97 days) |
| 5-chloro-2-methyl-4-isothiazolin-3-one | HIGH | HIGH |
| diethylene glycol monobutyl ether acetate | LOW | LOW |

**Continued...**

### 12.3. Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| 2-bromo-2-nitropropan-1,3-diol | LOW (LogKOW = -0.6408) |
| formaldehyde | LOW (LogKOW = 0.35) |
| 5-chloro-2-methyl-4-isothiazolin-3-one | LOW (LogKOW = 0.0444) |
| diethylene glycol monobutyl ether acetate | LOW (LogKOW = 1.2976) |

### 12.4. Mobility in soil

| Ingredient | Mobility |
|---|---|
| 2-bromo-2-nitropropan-1,3-diol | HIGH (KOC = 1) |
| formaldehyde | HIGH (KOC = 1) |
| 5-chloro-2-methyl-4-isothiazolin-3-one | LOW (KOC = 45.15) |
| diethylene glycol monobutyl ether acetate | LOW (KOC = 10) |

### 12.5. Results of PBT and vPvB assessment

| | P | B | T |
|---|---|---|---|
| Relevant available data | Not Available | Not Available | Not Available |
| PBT | ✗ | ✗ | ✗ |
| vPvB | ✗ | ✗ | ✗ |

| | |
|---|---|
| PBT Criteria fulfilled? | No |
| vPvB | No |

### 12.6. Endocrine disrupting properties

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

### 12.7. Other adverse effects

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

## SECTION 13 Disposal considerations

### 13.1. Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.<br>▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains.<br>▸ It may be necessary to collect all wash water for treatment before disposal.<br>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.<br>▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material). |
| **Waste treatment options** | Not Available |
| **Sewage disposal options** | Not Available |

## SECTION 14 Transport information

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

| | |
|---|---|
| 14.1. **UN number or ID number** | Not Applicable |
| 14.2. **UN proper shipping name** | Not Applicable |
| 14.3. **Transport hazard class(es)** | Class: Not Applicable<br>Subsidiary risk: Not Applicable |
| 14.4. **Packing group** | Not Applicable |
| 14.5. **Environmental hazard** | Not Applicable |

**Continued...**

| | | |
|---|---|---|
| 14.6. **Special precautions for user** | Hazard identification (Kemler) | Not Applicable |
| | Classification code | Not Applicable |
| | Hazard Label | Not Applicable |
| | Special provisions | Not Applicable |
| | Limited quantity | Not Applicable |
| | Tunnel Restriction Code | Not Applicable |

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

| | | |
|---|---|---|
| 14.1. **UN number** | Not Applicable | |
| 14.2. **UN proper shipping name** | Not Applicable | |
| 14.3. **Transport hazard class(es)** | ICAO/IATA Class | Not Applicable |
| | ICAO / IATA Subrisk | Not Applicable |
| | ERG Code | Not Applicable |
| 14.4. **Packing group** | Not Applicable | |
| 14.5. **Environmental hazard** | Not Applicable | |
| 14.6. **Special precautions for user** | Special provisions | Not Applicable |
| | Cargo Only Packing Instructions | Not Applicable |
| | Cargo Only Maximum Qty / Pack | Not Applicable |
| | Passenger and Cargo Packing Instructions | Not Applicable |
| | Passenger and Cargo Maximum Qty / Pack | Not Applicable |
| | Passenger and Cargo Limited Quantity Packing Instructions | Not Applicable |
| | Passenger and Cargo Limited Maximum Qty / Pack | Not Applicable |

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

| | | |
|---|---|---|
| 14.1. **UN number** | Not Applicable | |
| 14.2. **UN proper shipping name** | Not Applicable | |
| 14.3. **Transport hazard class(es)** | IMDG Class | Not Applicable |
| | IMDG Subrisk | Not Applicable |
| 14.4. **Packing group** | Not Applicable | |
| 14.5. **Environmental hazard** | Not Applicable | |
| 14.6. **Special precautions for user** | EMS Number | Not Applicable |
| | Special provisions | Not Applicable |
| | Limited Quantities | Not Applicable |

**Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

| | | |
|---|---|---|
| 14.1. **UN number** | Not Applicable | |
| 14.2. **UN proper shipping name** | Not Applicable | |
| 14.3. **Transport hazard class(es)** | Not Applicable | Not Applicable |
| 14.4. **Packing group** | Not Applicable | |
| 14.5. **Environmental hazard** | Not Applicable | |
| 14.6. **Special precautions for user** | Classification code | Not Applicable |
| | Special provisions | Not Applicable |
| | Limited quantity | Not Applicable |
| | Equipment required | Not Applicable |
| | Fire cones number | Not Applicable |

**14.7. Maritime transport in bulk according to IMO instruments**

**14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

| Product name | Group |
|---|---|
| 2-bromo-2-nitropropan-1,3-diol | Not Available |

**Continued...**

| Product name | Group |
|---|---|
| formaldehyde | Not Available |
| 1,2-benzisothiazoline-3-one | Not Available |
| 5-chloro-2-methyl-4-isothiazolin-3-one | Not Available |
| diethylene glycol monobutyl ether acetate | Not Available |
| aluminium hydroxide chloride | Not Available |

### 14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|---|---|
| 2-bromo-2-nitropropan-1,3-diol | Not Available |
| formaldehyde | Not Available |
| 1,2-benzisothiazoline-3-one | Not Available |
| 5-chloro-2-methyl-4-isothiazolin-3-one | Not Available |
| diethylene glycol monobutyl ether acetate | Not Available |
| aluminium hydroxide chloride | Not Available |

## SECTION 15 Regulatory information

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

**2-bromo-2-nitropropan-1,3-diol is found on the following regulatory lists**

Great Britain GB Biocidal Active Substances
Great Britain GB mandatory classification and labelling list (GB MCL)

**formaldehyde is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB Biocidal Active Substances
Great Britain GB mandatory classification and labelling list (GB MCL)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
UK REACH grandfathered registrations notified substances list
UK Workplace Exposure Limits (WELs).

**1,2-benzisothiazoline-3-one is found on the following regulatory lists**

Great Britain GB Biocidal Active Substances
Great Britain GB mandatory classification and labelling list (GB MCL)

**5-chloro-2-methyl-4-isothiazolin-3-one is found on the following regulatory lists**

Great Britain GB Biocidal Active Substances
Great Britain GB mandatory classification and labelling list (GB MCL)

**diethylene glycol monobutyl ether acetate is found on the following regulatory lists**

UK REACH grandfathered registrations notified substances list

**aluminium hydroxide chloride is found on the following regulatory lists**

Great Britain GB Biocidal Active Substances
UK Workplace Exposure Limits (WELs).
UK REACH grandfathered registrations notified substances list

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

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

| | |
|---|---|
| **Seveso Category** | Not Available |

### 15.2. Chemical safety assessment

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

**ECHA SUMMARY**

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|---|---|---|
| 2-bromo-2-nitropropan-1,3-diol | 52-51-7 | 603-085-00-8 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|---|---|---|---|
| 1 | Acute Tox. 4; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; STOT SE 3; Aquatic Acute 1 | GHS05; GHS09; Dgr | H302; H312; H315; H318; H335; H400 |
| 2 | Skin Irrit. 2; Eye Dam. 1; STOT SE 3; Aquatic Acute 1; Acute Tox. 3; Flam. Sol. 2; Self-react. C; Acute Tox. 2; Acute Tox. 2; Aquatic Chronic 1 | GHS05; GHS09; Dgr; GHS06; GHS02 | H315; H318; H335; H400; H301; H410; H228; H242; H310; H330 |

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|---|---|---|
| formaldehyde | 50-00-0 | 605-001-00-5 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|---|---|---|---|

**Continued...**

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|---|---|---|---|
| 1 | Acute Tox. 3; Acute Tox. 3; Skin Corr. 1B; Skin Sens. 1; Eye Dam. 1; Acute Tox. 3; Carc. 2 | GHS08; GHS05; GHS06; Dgr | H301; H311; H314; H317; H331; H351 |
| 2 | Skin Sens. 1A; Acute Tox. 2; Acute Tox. 3; Skin Corr. 1A; Eye Dam. 1; Muta. 2; Carc. 1A; STOT SE 3; Flam. Liq. 3; Flam. Gas 1; Liq.; Resp. Sens. 1; STOT SE 1; STOT RE 1; Met. Corr. 1; Acute Tox. 2; Aquatic Acute 1; Aquatic Chronic 1 | GHS06; Dgr; GHS08; GHS05; GHS09; GHS01 | H317; H330; H301; H314; H341; H350; H318; H335; H226; H220; H280; H334; H370; H372; H336; H290; H400; H310; H410 |

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|---|---|---|
| 1,2-benzisothiazoline-3-one | 2634-33-5 | 613-088-00-6 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|---|---|---|---|
| 1 | Acute Tox. 4; Skin Irrit. 2; Skin Sens. 1; Eye Dam. 1; Aquatic Acute 1 | GHS05; GHS09; Dgr | H302; H315; H317; H318; H400 |
| 2 | Acute Tox. 4; Skin Irrit. 2; Skin Sens. 1A; Eye Dam. 1; Aquatic Acute 1; Acute Tox. 1; Aquatic Chronic 1 | GHS09; GHS05; Dgr; GHS06; GHS08 | H302; H315; H317; H318; H400; H330; H410 |

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|---|---|---|
| 5-chloro-2-methyl-4-isothiazolin-3-one | 55965-84-9 | 613-167-00-5 | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|---|---|---|---|
| 1 | Acute Tox. 2; Acute Tox. 2; Skin Corr. 1B; Skin Sens. 1; Eye Dam. 1; Acute Tox. 2; Aquatic Acute 1 | GHS08; GHS09; GHS06; Dgr | H300; H310; H314; H317; H318; H330; H400 |
| 2 | Acute Tox. 1; Acute Tox. 1; Skin Corr. 1B; Skin Sens. 1A; Eye Dam. 1; Acute Tox. 1; Aquatic Acute 1; other:nose; Aquatic Chronic 1; Flam. Liq. 3; STOT SE 1; Resp. Sens. 1 | GHS08; GHS09; GHS06; Dgr; GHS05; GHS02 | H300; H310; H314; H317; H318; H330; H400; H335; H410; H226; H334; H370 |
| 1 | Acute Tox. 3; Acute Tox. 3; Skin Corr. 1B; Skin Sens. 1; Acute Tox. 3; Aquatic Acute 1; Aquatic Chronic 1 | GHS05; GHS09; GHS06; Dgr | H301; H311; H314; H317; H331; H410 |
| 2 | Acute Tox. 3; Skin Corr. 1A; Skin Sens. 1A; Aquatic Acute 1; Aquatic Chronic 1; Eye Dam. 1; Acute Tox. 2; Acute Tox. 1; STOT SE 3; Met. Corr. 1 | GHS05; GHS09; GHS06; Dgr; GHS08 | H301; H314; H317; H410; H318; H400; H310; H330; H335; H290; H334 |

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|---|---|---|
| diethylene glycol monobutyl ether acetate | 124-17-4 | Not Available | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|---|---|---|---|
| 1 | Not Classified | Not Available | Not Available |
| 2 | Skin Irrit. 2; Skin Sens. 1; Eye Irrit. 2; STOT SE 3; Resp. Sens. 1; Aquatic Chronic 4 | GHS07; Dgr | H315; H317; H319; H335; H334; H413 |

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|---|---|---|
| aluminium hydroxide chloride | 1327-41-9 | Not Available | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|---|---|---|---|
| 1 | Not Classified | Not Available | Not Available |
| 2 | Met. Corr. 1; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3 | GHS05; Wng | H290; H315; H319; H335 |
| 1 | Met. Corr. 1; Eye Dam. 1 | GHS05; Dgr | H290; H318 |
| 2 | Met. Corr. 1; Eye Dam. 1; Acute Tox. 4; Skin Corr. 1A; Aquatic Chronic 2 | GHS05; Dgr; GHS09 | H290; H318; H302; H314; H411 |

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

### National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (2-bromo-2-nitropropan-1,3-diol; formaldehyde; 1,2-benzisothiazoline-3-one; 5-chloro-2-methyl-4-isothiazolin-3-one; diethylene glycol monobutyl ether acetate; aluminium hydroxide chloride) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | Yes |

**Continued...**

| National Inventory | Status |
|---|---|
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | Yes |
| Vietnam - NCI | Yes |
| Russia - FBEPH | Yes |
| ***Legend:*** | *Yes = All CAS declared ingredients are on the inventory*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 08/03/2023 |
| **Initial Date** | 25/05/2022 |

### Full text Risk and Hazard codes

| | |
|---|---|
| **H220** | Extremely flammable gas. |
| **H226** | Flammable liquid and vapour. |
| **H228** | Flammable solid. |
| **H242** | Heating may cause a fire. |
| **H280** | Contains gas under pressure; may explode if heated. |
| **H290** | May be corrosive to metals. |
| **H300** | Fatal if swallowed. |
| **H301** | Toxic if swallowed. |
| **H302** | Harmful if swallowed. |
| **H310** | Fatal in contact with skin. |
| **H311** | Toxic in contact with skin. |
| **H312** | Harmful in contact with skin. |
| **H314** | Causes severe skin burns and eye damage. |
| **H315** | Causes skin irritation. |
| **H317** | May cause an allergic skin reaction. |
| **H318** | Causes serious eye damage. |
| **H330** | Fatal if inhaled. |
| **H331** | Toxic if inhaled. |
| **H334** | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| **H335** | May cause respiratory irritation. |
| **H336** | May cause drowsiness or dizziness. |
| **H341** | Suspected of causing genetic defects. |
| **H350** | May cause cancer. |
| **H351** | Suspected of causing cancer. |
| **H370** | Causes damage to organs. |
| **H372** | Causes damage to organs through prolonged or repeated exposure. |
| **H400** | Very toxic to aquatic life. |
| **H410** | Very toxic to aquatic life with long lasting effects. |
| **H411** | Toxic to aquatic life with long lasting effects. |
| **H413** | May cause long lasting harmful effects to aquatic life. |

### SDS Version Summary

| Version | Date of Update | Sections Updated |
|---|---|---|
| 2.6 | 08/03/2023 | Hazards identification - Classification, Composition / information on ingredients - Ingredients |

### Other information

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

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:
EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms

**Continued...**

EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

### Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

| Classification according to regulation (EC) No 1272/2008 [CLP] and amendments | Classification Procedure |
|---|---|
| Serious Eye Damage/Eye Irritation Category 2, H319 | On basis of test data |
| , EUH208 | Calculation method |

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