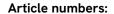


Trade Name:

AlphaLISA SureFire® Ultra™ Detection Kit

Human and Mouse BAD Total Detection Kit





ALSU-TBAD-A500 ALSU-TBAD-A10K ALSU-TBAD-A50K ALSU-TBAD-A-HV ALSU-TBAD-A-L

Components and Hazard Identification in ALSU assay kits.

| Kit Components | Vol / 100 point | Vol / 500 point | Vol / 10,000 point | Vol / 50,000 point | Н | Hazard Identification | |
|---|--------------------|--------------------|-----------------------|-----------------------|--|-----------------------|--|
| Activation Buffer B | 1 x 0.3 mL | 1 x 0.8 mL | 1 x 10 mL | 1 x 50 mL | N/A; | EUH208, EUH210 | |
| Dilution Buffer | 1 x 1.8 mL | 1 x 3 mL | 1 x 60 mL | 1 x 300 mL | N/A; | EUH208, EUH210 | |
| Lysis Buffer (5X) | 1 x 12 mL | 1 x 12 mL | 4 x 60 mL | 3 x 400 mL | < The state of the sta</td <td>GHS07; H319, EUH208</td> | GHS07; H319, EUH208 | |
| Reaction Buffer 1 - Ultra | 1 x 0.9 mL | 1 x 1.5 mL | 1 x 28 mL | 1 x 140 mL | N/A; | EUH208, EUH210 | |
| Reaction Buffer 2 - Ultra | 1 x 0.9 mL | 1 x 1.5 mL | 1 x 28 mL | 1 x 140 mL | N/A; | EUH208, EUH210 | |
| AlphaLISA® Capt <i>Sure</i> ™ Acceptor Beads (2 mg/mL) | 1 x 0.045mL | 1 x 0.06 mL | 1 x 1.1 mL | 1 x 5.5 mL | N/A; | EUH208, EUH210 | |
| Alpha Streptavidin Donor Beads (2 mg/mL) | 1 x 0.045mL | 1 x 0.06 mL | 1 x 1.1 mL | 1 x 5.5 mL | N/A; | N/A; | |
| Positive Control Lysate (lyophilized) | 1 x 250uL | 1 x 250uL | 1 x 250uL | 1 x 250uL | N/A; | EUH208, EUH210 | |
| | | | | | | | |

Components and Hazard Identification for Individual Sale items

*** = assay target name

| Components and Hazard Identification for Individual Sale Items | | | = assay target name | | |
|--|---|-----------------------|---|--|--|
| Composition | | azards identification | | | |
| ALSU-AB-100ml ALSU-AB-10ml | Activation Buffer | <u>(1)</u> | GHS07; H319, EUH208 | | |
| ALSU-ABB-100ml ALSU-ABB-10ml | Activation Buffer B | N/A; | EUH208, EUH210 | | |
| ALSU-ABC-100ml ALSU-ABC-10ml | Activation Buffer C | <u> </u> | GHS05; H318, EUH208 | | |
| ALSU-DB-100ml ALSU-DB-10ml | Dilution Buffer | N/A; | EUH208, EUH210 | | |
| ALSU-LB-100mL ALSU-LB-10mL | Lysis Buffer (5x) | 1 | GHS07; H319, EUH208 | | |
| ALSU-LBB-100mL ALSU-LBB-10mL | Lysis Buffer B (5x) plus Supplement B (pack) | ♦ ♦ | GHS07; H319, EUH208 plus GHS07; H319, EUH208 | | |
| ALSU-LBC-100mL ALSU-LBC-10mL | Lysis Buffer C (5x) plus Supplement C (Pack) | 1 2 | GHS07; H319, EUH208 plus GHS05; H318, EUH208 | | |
| ALSU-***-A-L | Positive Control Lysate | N/A; | EUH208, EUH210 | | |
| ALSU-ACAB-0.06mL ALSU-ACAB-1.2mL ALSU-ACAB-6mL | AlphaLISA® CaptSure™ Acceptor Beads (2 mg/mL) N/A | | EUH208, EUH210 | | |
| ALSU-ASDB-0.06mL ALSU-ASDB-1.2mL ALSU-ASDB-6mL | | | N/A; | | |





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Waltham, MA 02451 USA Ver #: 2024 V1.1



Activation Buffer B - Ultra TGR BioSciences Pty Ltd (an Abcam Company)

Chemwatch: 5555-11
Version No: 4.1
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **25/10/2022** Print Date: **19/09/2024** S.GHS.USA.EN.E

SECTION 1 Identification

| Product Identifier | |
|-------------------------------|-----------------------------|
| Product name | Activation Buffer B - Ultra |
| Chemical Name | Not Applicable |
| Synonyms | Not Available |
| Chemical formula | Not Applicable |
| Other means of identification | Not Available |

Recommended use of the chemical and restrictions on use

Relevant identified uses Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | TGR BioSciences Pty Ltd (an Abcam Company) |
|-------------------------|--|
| Address | Unit 3-4, 31 George Street Thebarton SA 5031 Australia |
| Telephone | +61 08 7228 2141 |
| Fax | Not Available |
| Website | www.tgrbiosciences.com |
| Email | ADE.info@abcam.com |

Emergency phone number

| Association / Organisation | Chemtrec Aus/North America/Revvity | |
|-----------------------------------|------------------------------------|--|
| Emergency telephone numbers | +61290372994 (Mon-Fri 8am to 5pm) | |
| Other emergency telephone numbers | +1703-527-3887/+31505445971 | |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Not considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| Classification | Not Applicable |
|----------------|----------------|

Label elements

| Hazard pictogram(s) | Not Applicable |
|---------------------|----------------|
| | |
| Signal word | Not Applicable |

Hazard statement(s)

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Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501

Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 55965-84-9 | <0.01 | isothiazolinones, mixed |
| Not Available | balance | Ingredients determined not to be hazardous |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

| Eye Contact | If this product comes in contact with eyes: • Wash out immediately with water. • If irritation continues, seek medical attention. • Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. | |
|--------------|--|--|
| Skin Contact | If skin or hair contact occurs: ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. | |
| Inhalation | If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. | |
| Ingestion | Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. | |

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. In such an event consider:

▶ foam

Special hazards arising from the substrate or mixture

| Fire Incompatibility None | known. |
|---------------------------|--------|
|---------------------------|--------|

| Special protective equipment and precautions for fire-fighters | | |
|--|---|--|
| Fire Fighting | Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. | |
| Fire/Explosion Hazard | The material is not readily combustible under normal conditions. However, it will break down under fire conditions and the organic component may burn. Not considered to be a significant fire risk. Heat may cause expansion or decomposition with violent rupture of containers. | |
| | Decomposes on heating and produces toxic fumes of: carbon dioxide (CO2) nitrogen oxides (NOx) other pyrolysis products typical of burning organic material. | |

SECTION 6 Accidental release measures

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Personal precautions, protective equipment and emergency procedures

See section 8

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Environmental precautions

See section 12

Methods and material for containment and cleaning up

| Minor Spills | Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. | |
|--------------|---|--|
| Major Spills | Minor hazard. ▶ Clear area of personnel. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Control personal contact with the substance, by using protective equipment as required. | |

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

SECTION 7 Handling and storage

| Precautions for safe handling | | | |
|-------------------------------|--|--|--|
| Safe handling | Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. | | |
| Other information | Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. | | |

Conditions for safe storage, including any incompatibilities

| Suitable container | Plastic tube or Plastic Bottle Polyethylene or polypropylene container. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks. | |
|-------------------------|--|--|
| Storage incompatibility | Storage incompatibility None known | |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | | TEEL-3 |
|-----------------------------|---------------|---------------|---------------|---------------|
| Activation Buffer B - Ultra | Not Available | Not Available | | Not Available |
| Ingredient | Original IDLH | | Revised IDLH | |
| isothiazolinones, mixed | Not Available | | Not Available | |

Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating Occupational Exposure Band Limit | | |
|-------------------------|--|--|--|
| isothiazolinones, mixed | E ≤ 0.1 ppm | | |
| 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. | | |

Exposure 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. Appropriate engineering The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. controls Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Individual protection measures, such as personal protective equipment Safety glasses with side shields Chemical goggles. Eye and face protection Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Skin protection See Hand protection below

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▶ Wear general protective gloves, eg. light weight rubber gloves. 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 Hands/feet protection advance and has therefore to be checked prior to the application. 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. Personal hygiene is a key element of effective hand care. **Body protection** See Other protection below No special equipment needed when handling small quantities. OTHERWISE: Other protection Overalls. Barrier cream. ▶ Eyewash unit.

Respiratory protection

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

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

| Appearance Liquid. Physical state Liquid Relative density (Water = 1) Not Available Odour Not Available Partition coefficient n-octanol / water Odour threshold Not Available Auto-ignition temperature (°C) Not Applicable PH (as supplied) Not Available Decomposition temperature (°C) Not Available Viscosity (cSt) Not Available Melting point / freezing point (°C) Not Available Not Available Viscosity (cSt) Not Available Initial boiling point and boiling range (°C) Not Applicable Molecular weight (g/mol) Not Applicable Flash point (°C) Not Applicable Explosive properties Not Available Flammability Not Applicable Oxidising properties Not Available Upper Explosive Limit (%) Not Applicable Surface Tension (dyn/cm or mN/m) Lower Explosive Limit (%) Not Applicable Volatile Component (%vol) Not Available |
|---|
| Odour Not Available Partition coefficient n-octanol / water Not Available Odour threshold Not Available Auto-ignition temperature (°C) Not Applicable pH (as supplied) Not Available Decomposition temperature (°C) Not Available Melting point / freezing point (°C) Not Available Viscosity (cSt) Not Available Initial boiling point and boiling range (°C) Not Available Molecular weight (g/mol) Not Applicable Flash point (°C) Not Applicable Taste Not Available Evaporation rate Not Available Explosive properties Not Available Flammability Not Applicable Oxidising properties Not Available Upper Explosive Limit (%) Not Applicable Surface Tension (dyn/cm or mN/m) Not Available |
| Odour threshold Not Available Auto-ignition temperature (°C) Not Applicable pH (as supplied) Not Available Decomposition temperature (°C) Not Available Melting point / freezing point (°C) Not Available Viscosity (cSt) Not Available Initial boiling point and boiling range (°C) Not Available Molecular weight (g/mol) Not Applicable Flash point (°C) Not Applicable Evaporation rate Not Available Explosive properties Not Available Flammability Not Applicable Oxidising properties Not Available Upper Explosive Limit (%) Not Applicable Surface Tension (dyn/cm or mN/m) Not Available Not Available Not Available Not Available Not Available Not Available |
| PH (as supplied) Not Available Photocomposition temperature (°C) Melting point / freezing point (°C) Not Available Plash point (°C) Not Applicable Flash point (°C) Not Applicable Evaporation rate Not Available Not Available Plash point (°C) Not Applicable Surface Tension (dyn/cm or mN/m) Not Available |
| Melting point / freezing point (°C) Not Available Flash point (°C) Not Applicable Evaporation rate Not Available Not Available Explosive properties Not Available Not Available Not Applicable Surface Tension (dyn/cm or mN/m) Not Available |
| Initial boiling point and boiling range (°C) Not Available Not Available Not Available Molecular weight (g/mol) Flash point (°C) Not Applicable Evaporation rate Not Available Not Available Explosive properties Not Available Oxidising properties Not Available Upper Explosive Limit (%) Not Applicable Not Applicable Surface Tension (dyn/cm or mN/m) Not Available |
| boiling range (°C) Flash point (°C) Not Applicable Evaporation rate Not Available Evaporation rate Not Available Explosive properties Not Available Oxidising properties Not Available Not Available Surface Tension (dyn/cm or mN/m) Not Available |
| Evaporation rate Not Available Explosive properties Not Available Flammability Not Applicable Oxidising properties Not Available Upper Explosive Limit (%) Not Applicable Surface Tension (dyn/cm or mN/m) Not Available |
| Flammability Not Applicable Oxidising properties Not Available Upper Explosive Limit (%) Not Applicable Surface Tension (dyn/cm or mN/m) Not Available |
| Upper Explosive Limit (%) Not Applicable Surface Tension (dyn/cm or mN/m) Not Available |
| Upper Explosive Limit (%) Not Applicable mN/m) Not Available |
| Lower Explosive Limit (%) Not Applicable Volatile Component (%vol) Not Available |
| Totallo Component (Note) |
| Vapour pressure (kPa) Not Available Gas group Not Available |
| Solubility in water Miscible pH as a solution (1%) Not Available |
| Vapour density (Air = 1) Not Available VOC g/L Not Available |
| Heat of Combustion (kJ/g) Not Available Ignition Distance (cm) Not Available |
| Flame Height (cm) Not Available Flame Duration (s) Not Available |
| Enclosed Space Ignition Time Equivalent (s/m3) Not Available Enclosed Space Ignition Deflagration Density (g/m3) Not Available |

SECTION 10 Stability and reactivity

| Reactivity | See section 7 |
|------------------------------------|---|
| Chemical stability | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

Information on toxicological effects

| Inhaled | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
|--------------|---|
| Ingestion | 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. |
| Skin Contact | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. |
| Eye | Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). |
| Chronic | Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. |

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| | TOXICITY IRRITATION | | | |
|-----------------------------|--|---|--|--|
| Activation Buffer B - Ultra | Not Available | Not Available | | |
| | TOXICITY | IRRITATION | | |
| | dermal (rat) LD50: >1008 mg/kg ^[1] | Eye: adverse effect observed (irreversible damage) ^[1] | | |
| isothiazolinones, mixed | Inhalation (Rat) LC50: 0.171 mg/l4h ^[1] | Skin: adverse effect observed (corrosive) ^[1] | | |
| | Oral (Rat) LD50: 53 mg/kg ^[2] | Skin: adverse effect observed (irritating) ^[1] | | |
| Legend: | 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 | | | |
| ISOTHIAZOLINONES, MIXED | The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. conta urticaria, involve antibody-mediated immune reactions. In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element he risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance. Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by non professional users. Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde releasing preservatives ensures that the level of free formaldehyde" where the concentration exceeds 0.05%. The use of formaldehyde releasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines can of causing cancers (nitrosamines) when used in formulations containing amines. The material may be irritating to the eye, with prolonged or repeated exposure and | | | |

Activation Buffer B - Ultra & ISOTHIAZOLINONES, MIXED

No significant acute toxicological data identified in literature search.

| 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

SECTION 12 Ecological information

Toxicity

| | Endpoint | Test Duration (hr) | Species | Value | Source |
|-----------------------------|------------------|--------------------|-------------------------------|------------------|------------------|
| Activation Buffer B - Ultra | Not Available | Not Available | Not Available | Not Available | Not Available |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/l | 2 |
| isothiazolinones, mixed | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 96h | Algae or other aquatic plants | 0.036mg/L | 2 |
| | NOEC(ECx) | 48h | Algae or other aquatic plants | <0.001mg/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

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|---------------------------------------|---------------------------------------|
| | No Data available for all ingredients | No Data available for all ingredients |

Bioaccumulative potential

Activation Buffer B - Ultra

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| Ingredient | Bioaccumulation |
|------------------|---------------------------------------|
| | No Data available for all ingredients |
| Mobility in soil | |
| Ingredient | Mobility |
| | No Data available for all ingredients |

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal Consult State Land Waste Management Authority for disposal.

SECTION 14 Transport information

Labels Required

| Marine Pollutant | NO |
|------------------|----|

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

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

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

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 |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

SECTION 15 Regulatory information

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

isothiazolinones, mixed is found on the following regulatory lists

Not Applicable

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
|--|----|
| Gas under pressure | No |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | No |
| Specific target organ toxicity (single or repeated exposure) | No |

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Activation Buffer B - Ultra

Aspiration Hazard No No Germ cell mutagenicity Simple Asphyxiant No Hazards Not Otherwise Classified No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

None Reported

Additional State Regulatory Information

Not Applicable

National Inventory Status

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

SECTION 16 Other information

| Revision Date | 25/10/2022 |
|---------------|------------|
| Initial Date | 12/07/2022 |

SDS Version Summary

| Version | Date of Update | Sections Updated |
|---------|----------------|--|
| 3.1 | 19/07/2022 | Name |
| 4.1 | 25/10/2022 | Disposal considerations - Disposal, Handling and storage - Storage (storage incompatibility) |

Other information

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

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

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

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Activation Buffer B - Ultra

- ▶ BCF: BioConcentration Factors
- ▶ BEI: Biological Exposure Index
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ AlIC: 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

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TEL (+61 3) 9572 4700.



Dilution Buffer - Ultra TGR BioSciences Pty Ltd (an Abcam Company)

Cheriwatch: 3535-16 Version No: 4.1 Safety Data Sheet according to OSHA HazCom Standard (2012) requirements Issue Date: **25/10/2022** Print Date: **19/09/2024** S.GHS.USA.EN.E

SECTION 1 Identification

| Product Identifier | | |
|-------------------------------|-------------------------|--|
| Product name | Dilution Buffer - Ultra | |
| Chemical Name | Not Applicable | |
| Synonyms | Dilution Buffer A | |
| Chemical formula | Not Applicable | |
| Other means of identification | Not Available | |

Recommended use of the chemical and restrictions on use

| Delevent identified uses | Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use. |
|--------------------------|--|
| Relevant identified uses | Use according to manufacturer's directions. |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| - · · · · · · · · · · · · · · · · · · · | |
|---|--|
| Registered company name | TGR BioSciences Pty Ltd (an Abcam Company) |
| Address | Unit 3-4, 31 George Street Thebarton SA 5031 Australia |
| Telephone | +61 08 7228 2141 |
| Fax | Not Available |
| Website | www.tgrbiosciences.com |
| Email | ADE.info@abcam.com |

Emergency phone number

| Emorgoney prione number | |
|-----------------------------------|------------------------------------|
| Association / Organisation | Chemtrec Aus/North America/Revvity |
| Emergency telephone numbers | +61290372994 (Mon-Fri 8am to 5pm) |
| Other emergency telephone numbers | +1703-527-3887/+31505445971 |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Not considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| Classification | Not Applicable | |
|---------------------|----------------|--|
| | | |
| Label elements | | |
| Hazard pictogram(s) | Not Applicable | |
| Signal word | Not Applicable | |

Page 2 of 8 **Dilution Buffer - Ultra** Issue Date: 25/10/2022 Print Date: 19/09/2024

Not Applicable

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name | |
|---------------|-----------|--|--|
| 55965-84-9 | <0.01 | isothiazolinones, mixed | |
| Not Available | balance | Ingredients determined not to be hazardous | |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

| Eye Contact | If this product comes in contact with eyes: Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
|--------------|--|
| Skin Contact | If skin or hair contact occurs: ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| Inhalation | If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. |
| Ingestion | Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

Most important symptoms and effects, both acute and delayed

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. In such an event consider:

▶ foam.

Special hazards arising from the substrate or mixture

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

| Special protective equipment | Special protective equipment and precautions for fire-fighters | | |
|------------------------------|---|--|--|
| Fire Fighting | Use water delivered as a fine spray to control fire and cool adjacent area. Do not approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. | | |
| Fire/Explosion Hazard | The material is not readily combustible under normal conditions. However, it will break down under fire conditions and the organic component may burn. Not considered to be a significant fire risk. Heat may cause expansion or decomposition with violent rupture of containers. Decomposition may produce toxic fumes of: carbon dioxide (CO2) other pyrolysis products typical of burning organic material. | | |

SECTION 6 Accidental release measures

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Dilution Buffer - Ultra

Issue Date: **25/10/2022**Print Date: **19/09/2024**

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| | • . |
|--------------|---|
| Minor Spills | Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. |
| Major Spills | Minor hazard. Clear area of personnel. Alert Fire Brigade and tell them location and nature of hazard. Control personal contact with the substance, by using protective equipment as required. |

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

SECTION 7 Handling and storage

Precautions for safe handling

| Safe handling | Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. | |
|-------------------|--|--|
| Other information | Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. | |

Conditions for safe storage, including any incompatibilities

| Suitable container | Plastic tube or plastic bottle. Polyethylene or polypropylene container. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks. | |
|-------------------------|--|--|
| Storage incompatibility | Avoid reaction with oxidising agents | |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | | TEEL-3 |
|-------------------------|---------------|---------------|---------------|---------------|
| Dilution Buffer - Ultra | Not Available | Not Available | | Not Available |
| Ingredient | Original IDLH | | Revised IDLH | |
| isothiazolinones, mixed | Not Available | | Not Available | |

Occupational Exposure Banding

Skin protection

See Hand protection below

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit | |
|-------------------------|--|----------------------------------|--|
| isothiazolinones, mixed | E | ≤ 0.1 ppm | |
| 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. | | |

Exposure 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. Appropriate engineering The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. controls Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Individual protection measures, such as personal protective equipment Safety glasses with side shields Chemical goggles. Eye and face protection Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of

lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

Dilution Buffer - Ultra

Issue Date: **25/10/2022**Print Date: **19/09/2024**

| Hands/feet protection | ▶ Wear general protective gloves, eg. light weight rubber gloves. 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. 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. Personal hygiene is a key element of effective hand care. |
|-----------------------|--|
| Body protection | See Other protection below |
| Other protection | No special equipment needed when handling small quantities. OTHERWISE: Overalls. Barrier cream. Eyewash unit. |

Respiratory protection

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

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

| illorillation on basic physical | | | |
|---|----------------|--|----------------|
| Appearance | Clear liquid. | | |
| Physical state | Liquid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Available | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |
| Heat of Combustion (kJ/g) | Not Available | Ignition Distance (cm) | Not Available |
| Flame Height (cm) | Not Available | Flame Duration (s) | Not Available |
| Enclosed Space Ignition Time Equivalent (s/m3) | Not Available | Enclosed Space Ignition Deflagration Density (g/m3) | Not Available |

SECTION 10 Stability and reactivity

| Reactivity | See section 7 |
|------------------------------------|---|
| Chemical stability | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

Information on toxicological effects

| The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. | | |
|---|--|--|
| The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. | | |
| The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. | | |
| Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). | | |
| Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. | | |
| | | |

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Dilution Buffer - Ultra

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| Dilution Buffer - Ultra | TOXICITY | IRRITATION |
|-------------------------|---|---|
| Dilution Burier - Oitra | Not Available | Not Available |
| | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >1008 mg/kg ^[1] | Eye: adverse effect observed (irreversible damage) ^[1] |
| isothiazolinones, mixed | Inhalation (Rat) LC50: 0.171 mg/l4h ^[1] | Skin: adverse effect observed (corrosive) ^[1] |
| | Oral (Rat) LD50: 53 mg/kg ^[2] | Skin: adverse effect observed (irritating) ^[1] |
| Legend: | Value obtained from Europe ECHA Registered Substact specified data extracted from RTECS - Register of Toxic | ances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise Effect of chemical Substances |

The following information refers to contact allergens as a group and may not be specific to this product.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.

In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance.

Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by nonprofessional users. No significant acute toxicological data identified in literature search.

ISOTHIAZOLINONES, MIXED

Version No. 4.1

Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%. The use of formaldehydereleasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

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.

Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.

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

Leaend:

— Data either not available or does not fill the criteria for classification - Data available to make classification

SECTION 12 Ecological information

Toxicity

| Dilution Buffer - Ultra | Endpoint | Test Duration (hr) | Species | Value | Source |
|-------------------------|------------------|--------------------|-------------------------------|------------------|------------------|
| | Not Available | Not Available | Not Available | Not Available | Not Available |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| isothiazolinones, mixed | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/l | 2 |
| | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 96h | Algae or other aquatic plants | 0.036mg/L | 2 |
| | NOEC(ECx) | 48h | Algae or other aquatic plants | <0.001mg/L | 2 |

Leaend:

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

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|---------------------------------------|---------------------------------------|
| | No Data available for all ingredients | No Data available for all ingredients |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|------------|---------------------------------------|
| | No Data available for all ingredients |

Dilution Buffer - Ultra

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Mobility in soil

| Ingredient | Mobility |
|------------|---------------------------------------|
| | No Data available for all ingredients |

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal Consu

Consult State Land Waste Management Authority for disposal.

SECTION 14 Transport information

Labels Required

Marine Pollutant NO

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

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

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

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 |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

SECTION 15 Regulatory information

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

isothiazolinones, mixed is found on the following regulatory lists

Not Applicable

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
|--|----|
| Gas under pressure | No |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | No |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |

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| Simple Asphyxiant | |
|----------------------------------|--|
| Hazards Not Otherwise Classified | |

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

None Reported

Additional State Regulatory Information

Not Applicable

National Inventory Status

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

SECTION 16 Other information

| Revision Date | 25/10/2022 |
|---------------|------------|
| Initial Date | 13/07/2022 |

SDS Version Summary

| Version | Date of Update | Sections Updated |
|---------|-------------------|---|
| 3.1 | 16/08/2022 | Name |
| 4.1 | 25/10/2022 | Disposal considerations - Disposal, Handling and storage - Storage (storage incompatibility), Identification of the substance / mixture and of the company / undertaking - Synonyms |

Other information

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

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

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_o
- ► 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

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Dilution Buffer - Ultra

- ▶ BEI: Biological Exposure Index
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ AIIC: Australian Inventory of Industrial Chemicals
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 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
- NIP: No-Longer Polymers

 ENCS: Existing and New Chemical Substances Inventory

 KECI: Korea Existing Chemicals Inventory

 NZIoC: New Zealand Inventory of Chemicals

- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances
- ► TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.



Lysis Buffer (5X) - Ultra TGR BioSciences Pty Ltd (an Abcam Company)

Chemwatch: 5555-13 Version No: 9.1 Safety Data Sheet according to OSHA HazCom Standard (2012) requirements Issue Date: **05/09/2024** Print Date: **19/09/2024** S.GHS.USA.EN.E

SECTION 1 Identification

Other means of identification

| Product Identifier | |
|--------------------|---------------------------|
| Product name | Lysis Buffer (5X) - Ultra |
| Chemical Name | Not Applicable |
| Synonyms | Lysis Buffer (5X) A |
| Chemical formula | Not Applicable |

Recommended use of the chemical and restrictions on use

Not Available

| Relevant identified uses | Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use. |
|--------------------------|--|
| Relevant identified uses | Use according to manufacturer's directions. |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | TGR BioSciences Pty Ltd (an Abcam Company) | |
|--------------------------|--|--|
| Address | Unit 3-4, 31 George Street Thebarton SA 5031 Australia | |
| Telephone | +61 08 7228 2141 | |
| Fax | Not Available | |
| Website | www.tgrbiosciences.com | |
| Email ADE.info@abcam.com | | |

Emergency phone number

| Emorgoney prione number | |
|-----------------------------------|------------------------------------|
| Association / Organisation | Chemtrec Aus/North America/Revvity |
| Emergency telephone numbers | +61290372994 (Mon-Fri 8am to 5pm) |
| Other emergency telephone numbers | +1703-527-3887/+31505445971 |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification Serious Eye Damage/Eye Irritation Category 2A

Label elements

Hazard pictogram(s)



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Issue Date: **05/09/2024**Print Date: **19/09/2024**

Signal word Warning

Hazard statement(s)

H319 Causes serious eye irritation.

Hazard(s) not otherwise classified

Not Applicable

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 rinsi | |
|--|---|
| P337+P313 | If eye irritation persists: Get medical advice/attention. |

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

P501

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 9002-93-1 | <2.5 | <u>p-tert-octylphenol ethoxylate</u> |
| 55965-84-9 | <0.01 | isothiazolinones, mixed |
| 7681-49-4 | >0.1 | sodium fluoride |
| Not Available | balance | Ingredients determined not to be hazardous |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

Immediately give a glass of water.

SECTION 4 First-aid measures

Description of first aid measures

| Eye Contact | If this product comes in contact with the eyes: Wash out immediately with fresh running water. 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. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
|--------------|---|
| Skin Contact | If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. |
| Inhalation | If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. |

First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Most important symptoms and effects, both acute and delayed

Ingestion

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically

SECTION 5 Fire-fighting measures

Extinguishing media

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

Special hazards arising from the substrate or mixture

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

Special protective equipment and precautions for fire-fighters

Fire Fighting Alert Fire Brigade a

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
 Prevent, by any means available, spillage from entering drains or water courses.

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Use fire fighting procedures suitable for surrounding area. ▶ The material is not readily combustible under normal conditions. ▶ However, it will break down under fire conditions and the organic component may burn. ▶ Not considered to be a significant fire risk. ▶ Heat may cause expansion or decomposition with violent rupture of containers. Decomposition may produce toxic fumes of: carbon dioxide (CO2) other pyrolysis products typical of burning organic material. May emit poisonous fumes.

Fire/Explosion Hazard

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

May emit corrosive fumes.

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| Minor Spills | Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. |
|--------------|---|
| Major Spills | Moderate hazard. Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. |

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

SECTION 7 Handling and storage

| Precautions for safe handling | | |
|-------------------------------|---|--|
| Safe handling | DO NOT allow clothing wet with material to stay in contact with skin Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture. | |
| Other information | Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. | |

Conditions for safe storage, including any incompatibilities

| Suitable container | Plastic Bottles Polyethylene or polypropylene container. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks. |
|-------------------------|---|
| Storage incompatibility | ► Avoid reaction with oxidising agents |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|--|--------------------|---------------------------|--------------|------------------|------------------|---|
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | sodium fluoride | Fluorides (as F) | 2.5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-2 | sodium fluoride | Fluoride as dust | 2.5 mg/m3 | Not Available | Not Available | (Z37.28-1969) |
| US NIOSH Recommended Exposure Limits (RELs) | sodium fluoride | Sodium fluoride (as F) | 2.5 mg/m3 | Not Available | Not Available | [*Note: The REL also applies to other inorganic, solid fluorides (as F).] |

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | | TEEL-3 |
|-------------------------------|---------------|----------|---------------|-------------|
| sodium fluoride | 17 mg/m3 | 90 mg/m3 | | 1,100 mg/m3 |
| | | | | |
| Ingredient | Original IDLH | | Revised IDLH | |
| p-tert-octylphenol ethoxylate | Not Available | | Not Available | |
| isothiazolinones, mixed | Not Available | | Not Available | |
| sodium fluoride | 250 mg/m3 | | Not Available | |

Occupational Exposure Banding

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| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|-------------------------------|--|----------------------------------|
| p-tert-octylphenol ethoxylate | E | ≤ 0.1 ppm |
| isothiazolinones, mixed | E | ≤ 0.1 ppm |
| 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. | |

Exposure controls

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. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Individual protection measures, such as personal protective equipment









Eye and face protection

- Safety glasses with side shields.
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

Skin protection

Wear chemical protective gloves, e.g. PVC.

Hands/feet protection

▶ Wear safety footwear or safety gumboots, e.g. Rubber 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. 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.

Personal hygiene is a key element of effective hand care.

Body protection

See Other protection below

Other protection

- Overalls. P.V.C apron.
- Barrier cream.
- Skin cleansing cream.

Respiratory protection

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

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

| Appearance | Liquid. | | |
|--|----------------|---|----------------|
| | | | |
| Physical state | Liquid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Available | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |
| Heat of Combustion (kJ/g) | Not Available | Ignition Distance (cm) | Not Available |
| Flame Height (cm) | Not Available | Flame Duration (s) | Not Available |

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Enclosed Space Ignition
Time Equivalent (s/m3)

Not Available

Enclosed Space Ignition
Deflagration Density (g/m3)

Not Available

SECTION 10 Stability and reactivity

| Reactivity | See section 7 |
|------------------------------------|--|
| Chemical stability | Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

Information on toxicological effects

| Inhaled | Not normally a hazard due to non-volatile nature of product The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
|--------------|---|
| Ingestion | 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. |
| Skin Contact | There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Open cuts, abraded or irritated skin should not be exposed to this material 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. |
| Chronic | Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility. Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. |
| | |

| Lysis Buffer (5X) - Ultra | TOXIOTT | indirection of the second of t | |
|-------------------------------|--|--|--|
| Lysis Buller (3x) - Oilla | Not Available | Not Available | |
| | TOXICITY | IRRITATION | |
| p-tert-octylphenol ethoxylate | Oral (Rat) LD50: 1800 mg/kg ^[2] | Eye (rabbit): 1 mg - moderate | |
| | | Skin (human): 2 mg/3d -l - mild | |
| | TOXICITY | IRRITATION | |
| | dermal (rat) LD50: >1008 mg/kg ^[1] | Eye: adverse effect observed (irreversible damage) ^[1] | |
| isothiazolinones, mixed | Inhalation (Rat) LC50: 0.171 mg/l4h ^[1] | Skin: adverse effect observed (corrosive) ^[1] | |
| | Oral (Rat) LD50: 53 mg/kg ^[2] | Skin: adverse effect observed (irritating) $^{[1]}$ | |
| | TOXICITY | IRRITATION | |
| | dermal (rat) LD50: >2000 mg/kg ^[1] | Eye (rabbit): 20 mg/24h-moderate | |
| sodium fluoride | Oral (Rat) LD50: >25<2000 mg/kg ^[1] | Eye: adverse effect observed (irritating) ^[1] | |
| | | Skin: no adverse effect observed (not irritating) ^[1] | |
| | | | |

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

IRRITATION

co

ETHOXYLATE

Octoxynols:

TOXICITY

Octoxynols of various chain lengths as well as octoxynol salts and organic acids function in cosmetics either as surfactants-emulsifying agents, surfactants-cleansing agents, surfactants-olubilizing agents, or surfactants-hydrotropes in a wide variety of cosmetic products at concentrations ranging from 0.0008% to 25%, with most less than 5.0%. The octoxynols are chemically similar to nonoxynols.. Long-chain nonoxynols (9 and above) were considered safe as used, whereas short-chain nonoxynols (8 and below) were considered safe as used in rinse-off products and safe at concentrations less than 5% in leave-on formulations. Acute exposure of hamsters to Octoxynol-9 by bronchopulmonary lavage produced pneumonia, pulmonary edema, and intra-alveolar hemorrhage.

Humans have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents and other cleaning products. Exposure to these chemicals can occur through swallowing, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that relatively high volumes would have to occur to produce any toxic response. No death due to poisoning with alcohol ethoxylates has ever been reported.

Both laboratory and animal testing has shown that there is no evidence for alcohol ethoxylates (AEs) causing genetic damage, mutations or cancer. No adverse reproductive or developmental effects were observed.

ISOTHIAZOLINONES, MIXED

P-TERT-OCTYLPHENOL

The following information refers to contact allergens as a group and may not be specific to this product.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.

In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in

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the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance. Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by nonprofessional users. No significant acute toxicological data identified in literature search. Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%. The use of formaldehydereleasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. 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. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce SODIUM FLUORIDE conjunctivitis The substance is classified by IARC as Group 3: Lysis Buffer (5X) - Ultra & NOT classifiable as to its carcinogenicity to humans. SODIUM FLUORIDE Evidence of carcinogenicity may be inadequate or limited in animal testing. 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 ISOTHIAZOLINONES, MIXED compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset & SODIUM FLUORIDE of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. **Acute Toxicity** Carcinogenicity × Skin Irritation/Corrosion Reproductivity

Legend:

X − Data either not available or does not fill the criteria for classification
Pote available to make classification

Data available to make classification

×

×

STOT - Single Exposure

Aspiration Hazard

STOT - Repeated Exposure

SECTION 12 Ecological information

Serious Eve

sensitisation Mutagenicity ×

Damage/Irritation Respiratory or Skin

Toxicity

Version No: 9.1

| | Endpoint | Test Duration (hr) | Species | Value | Source |
|------------------------------|------------------|--------------------|-------------------------------|------------------|------------------|
| Lysis Buffer (5X) - Ultra | Not Available | Not Available | Not Available | Not Available | Not Available |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| -tert-octylphenol ethoxylate | LC50 | 96h | Fish | >2.8<3.2mg/L | 4 |
| | EC50(ECx) | 96h | Fish | 3mg/L | 5 |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/l | 2 |
| isothiazolinones, mixed | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 96h | Algae or other aquatic plants | 0.036mg/L | 2 |
| | NOEC(ECx) | 48h | Algae or other aquatic plants | <0.001mg/L | 2 |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| | BCF | 672h | Fish | <0.66 | 7 |
| | EC50 | 72h | Algae or other aquatic plants | >121.8mg/L | 4 |
| sodium fluoride | EC50 | 48h | Crustacea | 36.2mg/L | 5 |
| | LC50 | 96h | Fish | 38-68mg/l | 4 |
| | EC50 | 96h | Algae or other aquatic plants | 43mg/l | 2 |
| | NOEC(ECx) | 2160h | Fish | 3.1mg/l | 4 |

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|-------------------------------|-------------------------|------------------|
| p-tert-octylphenol ethoxylate | HIGH | HIGH |
| sodium fluoride | LOW | LOW |

Bioaccumulative potential

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| Ingredient | Bioaccumulation |
|-------------------------------|-----------------------|
| p-tert-octylphenol ethoxylate | HIGH (LogKOW = 4.863) |
| sodium fluoride | LOW (BCF = 6.4) |
| Mobility in soil | |
| Ingredient | Mobility |
| p-tert-octylphenol ethoxylate | LOW (Log KOC = 699.2) |

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal Consult State Land Waste Management Authority for disposal.

LOW (Log KOC = 14.3)

SECTION 14 Transport information

Labels Required

sodium fluoride

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| Marine Pollutant | NO |
|------------------|----|

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

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

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

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 |
|-------------------------------|---------------|
| p-tert-octylphenol ethoxylate | Not Available |
| isothiazolinones, mixed | Not Available |
| sodium fluoride | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|-------------------------------|---------------|
| p-tert-octylphenol ethoxylate | Not Available |
| isothiazolinones, mixed | Not Available |
| sodium fluoride | Not Available |

SECTION 15 Regulatory information

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

p-tert-octylphenol ethoxylate is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

isothiazolinones, mixed is found on the following regulatory lists

Not Applicable

sodium fluoride is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

US - Massachusetts - Right To Know Listed Chemicals

US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)

US CWA (Clean Water Act) - List of Hazardous Substances US DOE Temporary Emergency Exposure Limits (TEELs)

US EPA Integrated Risk Information System (IRIS)

US NIOSH Recommended Exposure Limits (RELs)

US OSHA Permissible Exposure Limits (PELs) Table Z-1

US OSHA Permissible Exposure Limits (PELs) Table Z-2

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids) No

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| Gas under pressure | No |
|--|-----|
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | Yes |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |
| Simple Asphyxiant | No |
| Hazards Not Otherwise Classified | No |

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

| Name | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|-----------------|------------------------------------|---------------------------|
| sodium fluoride | 1000 | 454 |

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

None Reported

Additional State Regulatory Information

Not Applicable

National Inventory Status

| National Inventory | Status | |
|---|--|--|
| Australia - AIIC / Australia Non- Industrial Use | No (isothiazolinones, mixed) | |
| Canada - DSL | Yes | |
| Canada - NDSL | No (p-tert-octylphenol ethoxylate; isothiazolinones, mixed; sodium fluoride) | |
| China - IECSC | Yes | |
| Europe - EINEC / ELINCS / NLP | No (p-tert-octylphenol ethoxylate; isothiazolinones, mixed) | |
| Japan - ENCS | Yes | |
| Korea - KECI | Yes | |
| New Zealand - NZIoC Yes | | |
| Philippines - PICCS Yes | | |
| USA - TSCA No (isothiazolinones, mixed) | | |
| Taiwan - TCSI Yes | | |
| Mexico - INSQ | No (p-tert-octylphenol ethoxylate; isothiazolinones, mixed) | |
| Vietnam - NCI | Yes | |
| Russia - FBEPH | Yes | |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. | |

SECTION 16 Other information

| Revision Date | 05/09/2024 |
|---------------|------------|
| Initial Date | 12/07/2022 |

Lysis Buffer (5X) - Ultra

Issue Date: 05/09/2024 Print Date: 19/09/2024

| Version | Date of Update | Sections Updated |
|---------|----------------|---|
| 8.1 | 21/08/2024 | Toxicological information - Acute Health (inhaled) |
| 9.1 | 05/09/2024 | Identification of the substance / mixture and of the company / undertaking - Synonyms |

Other information

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

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

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 Limit₀
- ▶ 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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- ▶ 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

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TEL (+61 3) 9572 4700.



Reaction Buffer 1 - Ultra TGR BioSciences Pty Ltd (an Abcam Company)

Chemwatch: **5555-14**Version No: **4.1**Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **25/10/2022** Print Date: **19/09/2024** S.GHS.USA.EN.E

SECTION 1 Identification

| Product Identifier | | |
|--|--|--|
| Product name Reaction Buffer 1 - Ultra | | |
| Chemical Name Not Applicable | | |
| Synonyms Reaction Buffer 1 - MPSU; Reaction Buffer 2 – Ultra; Reaction Buffer 2 & Reaction Buffer 3 - MPSU | | |
| Chemical formula Not Applicable | | |
| Other means of identification | Reaction Buffer 1 - MPSU, Reaction Buffer 2 - Ultra, Reaction Buffer 2 -MPSU, Reaction Buffer 3 - MPSU | |

Recommended use of the chemical and restrictions on use

| Relevant identified uses | Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use. | |
|--------------------------|--|---|
| | Relevant identified uses | Use according to manufacturer's directions. |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | TGR BioSciences Pty Ltd (an Abcam Company) | |
|--------------------------|--|--|
| Address | Unit 3-4, 31 George Street Thebarton SA 5031 Australia | |
| Telephone | +61 08 7228 2141 | |
| Fax | Fax Not Available | |
| Website | Website www.tgrbiosciences.com | |
| Email ADE.info@abcam.com | | |

Emergency phone number

| Association / Organisation | Chemtrec Aus/North America/Revvity +61290372994 (Mon-Fri 8am to 5pm) | |
|-----------------------------------|--|--|
| Emergency telephone numbers | | |
| Other emergency telephone numbers | +1703-527-3887/+31505445971 | |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Not considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| Classification | Not Applicable | | |
|---------------------|----------------|--|--|
| | | | |
| Label elements | | | |
| Hazard pictogram(s) | Not Applicable | | |
| Signal word | Not Applicable | | |
| | | | |

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Reaction Buffer 1 - Ultra

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Not Applicable

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 55965-84-9 | <0.01 | isothiazolinones, mixed |
| Not Available | balance | Ingredients determined not to be hazardous |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

| Eye Contact If this product comes in contact with eyes: Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. | |
|---|---|
| Skin Contact | If skin or hair contact occurs: ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| Inhalation | If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. |
| Ingestion | Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

Most important symptoms and effects, both acute and delayed

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. In such an event consider:

▶ foam.

Special hazards arising from the substrate or mixture

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

| Special protective equipment a | Special protective equipment and precautions for fire-fighters | | |
|--------------------------------|---|--|--|
| Fire Fighting | Use water delivered as a fine spray to control fire and cool adjacent area. Do not approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. | | |
| Fire/Explosion Hazard | The material is not readily combustible under normal conditions. However, it will break down under fire conditions and the organic component may burn. Not considered to be a significant fire risk. Heat may cause expansion or decomposition with violent rupture of containers. Decomposition may produce toxic fumes of: carbon dioxide (CO2) other pyrolysis products typical of burning organic material. | | |

SECTION 6 Accidental release measures

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Reaction Buffer 1 - Ultra

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Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| Minor Spills Minor Spills Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. | |
|---|---|
| Major Spills | Minor hazard. ▶ Clear area of personnel. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Control personal contact with the substance, by using protective equipment as required. |

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

SECTION 7 Handling and storage

Precautions for safe handling

| Safe handling | Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. |
|-------------------|--|
| Other information | Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. |

Conditions for safe storage, including any incompatibilities

| Suitable container | Plastic tube or plastic bottle. Polyethylene or polypropylene container. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks. |
|-------------------------|--|
| Storage incompatibility | ▶ Avoid reaction with oxidising agents |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | | TEEL-3 |
|---------------------------|---------------|---------------|---------------|---------------|
| Reaction Buffer 1 - Ultra | Not Available | Not Available | | Not Available |
| Ingredient | Original IDLH | | Revised IDLH | |
| isothiazolinones, mixed | Not Available | | Not Available | |

Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|-------------------------|--|----------------------------------|
| isothiazolinones, mixed | E | ≤ 0.1 ppm |
| 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. | |

Exposure 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. Appropriate engineering The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. controls Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Individual protection measures, such as personal protective equipment Safety glasses with side shields Chemical goggles. Eye and face protection Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Skin protection See Hand protection below

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Reaction Buffer 1 - Ultra

| Hands/feet protection | Wear general protective gloves, eg. light weight rubber gloves. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer 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. 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. Personal hygiene is a key element of effective hand care. | |
|-----------------------|---|--|
| Body protection | See Other protection below | |
| Other protection | No special equipment needed when handling small quantities. OTHERWISE: Overalls. Barrier cream. Eyewash unit. | |

Respiratory protection

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

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

| illorillation on basic physical | | | |
|---|----------------|--|----------------|
| Appearance | Clear liquid. | | |
| Physical state | Liquid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Available | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |
| Heat of Combustion (kJ/g) | Not Available | Ignition Distance (cm) | Not Available |
| Flame Height (cm) | Not Available | Flame Duration (s) | Not Available |
| Enclosed Space Ignition Time Equivalent (s/m3) | Not Available | Enclosed Space Ignition Deflagration Density (g/m3) | Not Available |

SECTION 10 Stability and reactivity

| Reactivity | See section 7 | |
|------------------------------------|---|--|
| Chemical stability | oduct is considered stable and hazardous polymerisation will not occur. | |
| Possibility of hazardous reactions | See section 7 | |
| Conditions to avoid | See section 7 | |
| Incompatible materials | See section 7 | |
| Hazardous decomposition products | See section 5 | |

SECTION 11 Toxicological information

Information on toxicological effects

| Inhaled | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
|--------------|---|
| Ingestion | 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. |
| Skin Contact | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. |
| Eye | Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). |
| Chronic | Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. |

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| Reaction Buffer 1 - Ultra | TOXICITY | IRRITATION | |
|---------------------------|--|---|--|
| | Not Available | Not Available | |
| | TOXICITY | IRRITATION | |
| isothiazolinones, mixed | dermal (rat) LD50: >1008 mg/kg ^[1] | Eye: adverse effect observed (irreversible damage) ^[1] | |
| | Inhalation (Rat) LC50: 0.171 mg/l4h ^[1] | Skin: adverse effect observed (corrosive) ^[1] | |
| | Oral (Rat) LD50: 53 mg/kg ^[2] | Skin: adverse effect observed (irritating) ^[1] | |
| | | | |
| Legend: | Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless other specified data extracted from RTECS - Register of Toxic Effect of chemical Substances | | |

The following information refers to contact allergens as a group and may not be specific to this product.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.

In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance.

Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by non-professional users. No significant acute toxicological data identified in literature search.

ISOTHIAZOLINONES, MIXED

Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%. The use of formaldehyde-releasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

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.

Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.

| 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

SECTION 12 Ecological information

Toxicity

| Reaction Buffer 1 - Ultra | Endpoint | Test Duration (hr) | Species | Value | Source |
|---------------------------|------------------|--------------------|-------------------------------|------------------|------------------|
| | Not Available | Not Available | Not Available | Not Available | Not Available |
| isothiazolinones, mixed | Endpoint | Test Duration (hr) | Species | Value | Source |
| | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/l | 2 |
| | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 96h | Algae or other aquatic plants | 0.036mg/L | 2 |
| | NOEC(ECx) | 48h | Algae or other aquatic plants | <0.001mg/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

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|---------------------------------------|---------------------------------------|
| | No Data available for all ingredients | No Data available for all ingredients |

Bioaccumulative potential

| Ingredient | Bioaccumulation | |
|------------|---------------------------------------|--|
| | No Data available for all ingredients | |

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Mobility in soil

| Ingredient | Mobility |
|------------|---------------------------------------|
| | No Data available for all ingredients |

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal Consult State Land Waste Management Authority for disposal.

SECTION 14 Transport information

Labels Required

Marine Pollutant NO

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

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

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

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 |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

SECTION 15 Regulatory information

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

isothiazolinones, mixed is found on the following regulatory lists

Not Applicable

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
|--|----|
| Gas under pressure | No |
| Explosive | No |
| Self-heating Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | No |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |

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Reaction Buffer 1 - Ultra

Simple Asphyxiant No Hazards Not Otherwise Classified No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

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US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

None Reported

Additional State Regulatory Information

Not Applicable

National Inventory Status

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

SECTION 16 Other information

| Revision Date | 25/10/2022 |
|---------------|------------|
| Initial Date | 12/07/2022 |

SDS Version Summary

| Version | Date of Update | Sections Updated |
|---------|-------------------|---|
| 3.1 | 19/07/2022 | Name |
| 4.1 | 25/10/2022 | Disposal considerations - Disposal, Handling and storage - Storage (storage incompatibility), Identification of the substance / mixture and of the company / undertaking - Synonyms |

Other information

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

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

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_o
- ► 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

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Reaction Buffer 1 - Ultra

- BEI: Biological Exposure IndexDNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ 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
- NIP: No-Longer Polymers

 ENCS: Existing and New Chemical Substances Inventory

 KECI: Korea Existing Chemicals Inventory

 NZIoC: New Zealand Inventory of Chemicals

- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances

- TSCA: Toxic Substances Control Act
 TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.



AlphaLISA CaptSure[™] Acceptor Beads (2mg/mL) TGR BioSciences Pty Ltd (an Abcam Company)

Chemwatch: 5555-20 Version No: 3.1 Safety Data Sheet according to OSHA HazCom Standard (2012) requirements Issue Date: **25/10/2022** Print Date: **19/09/2024** S.GHS.USA.EN.E

SECTION 1 Identification

| Product Identifier | |
|-------------------------------|---|
| Product name | AlphaLISA CaptSure™ Acceptor Beads (2mg/mL) |
| Chemical Name | Not Applicable |
| Synonyms | Alpha 615 CaptSure™ Acceptor Beads (2mg/mL) _ Multiplex; Alpha 545 CaptSure2™ Acceptor Beads (2mg/mL) _ Multiplex; Alpha 615 anti-p-AKT(1/2/3) (Ser473) (mlgG1) Acceptor Beads; Alpha 615 anti-p-ERK (mlgG1) Acceptor Beads |
| Chemical formula | Not Applicable |
| Other means of identification | Alpha 545 CaptSure2 Acceptor Beads (2mg/mL)_MPSU, Alpha 615 CaptSure Acceptor Beads (2mg/mL)_MPSU |

Recommended use of the chemical and restrictions on use

| Relevant identified uses | Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use. Use according to manufacturer's directions. |
|--------------------------|---|
| | Use according to manufacturer's directions. |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | TGR BioSciences Pty Ltd (an Abcam Company) | |
|-------------------------|--|--|
| Address | Unit 3-4, 31 George Street Thebarton SA 5031 Australia | |
| Telephone | r61 08 7228 2141 | |
| Fax | Not Available | |
| Website | www.tgrbiosciences.com | |
| Email | Email ADE.info@abcam.com | |

Emergency phone number

| • • | | |
|-----------------------------------|------------------------------------|--|
| Association / Organisation | Chemtrec Aus/North America/Revvity | |
| Emergency telephone numbers | +61290372994 (Mon-Fri 8am to 5pm) | |
| Other emergency telephone numbers | +1703-527-3887/+31505445971 | |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Not considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| Classification | Not Applicable |
|----------------|----------------|
| | |

Label elements

| Hazard pictogram(s) | Not Applicable |
|---------------------|----------------|
| Signal word | Not Applicable |

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AlphaLISA CaptSure™ Acceptor Beads (2mg/mL)

Issue Date: 25/10/2022 Print Date: 19/09/2024

Hazard statement(s)

Not Applicable

Version No: 3.1

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 55965-84-9 | <0.01 | isothiazolinones, mixed |
| Not Available | balance | Ingredients determined not to be hazardous |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

| , | | |
|--|--|--|
| Eye Contact | If this product comes in contact with eyes: Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. | |
| Skin Contact | If skin or hair contact occurs: ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. | |
| Inhalation | If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. | |
| Ingestion First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. | | |

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

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

Special hazards arising from the substrate or mixture

Fire Incompatibility None known.

Special protective equipment and precautions for fire-fighters

| | • | | _ • | |
|---------------|------------|---------------|---|--|
| Fire Fighting | | Fire Fighting | Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. | |
| | Fire/Explo | sion Hazard | Non combustible. Not considered a significant fire risk, however containers may burn. | |

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

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AlphaLISA CaptSure™ Acceptor Beads (2mg/mL)

Issue Date: 25/10/2022 Print Date: 19/09/2024

Methods and material for containment and cleaning up

Clean up all spills immediately. Avoid contact with skin and eves Minor Spills

- Wear impervious gloves and safety glasses.
- ▶ Use dry clean up procedures and avoid generating dust.
- Clear area of personnel and move upwind.
 - Alert Fire Brigade and tell them location and nature of hazard. Control personal contact with the substance, by using protective equipment and dust respirator.
 - Prevent spillage from entering drains, sewers or water courses.

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

SECTION 7 Handling and storage

Precautions for safe handling

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Safe handling

Major Spills

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials

Other information

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry area protected from environmental extremes.
- Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container

Brown tube or bottle

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

Storage incompatibility

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|--|---------------|---------------|---------------|
| AlphaLISA CaptSure™ Acceptor Beads (2mg/mL) | Not Available | Not Available | Not Available |
| | | | |

| Ingredient | Original IDLH | Revised IDLH |
|-------------------------|---------------|---------------|
| isothiazolinones, mixed | Not Available | Not Available |

Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|-------------------------|--|----------------------------------|
| isothiazolinones, mixed | E | ≤ 0.1 ppm |
| 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. | |

Exposure controls

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. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Individual protection measures, such as personal protective equipment









Eye and face protection

- Safety glasses with side shields
- Chemical goggles
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

Skin protection

See Hand protection below

Hands/feet protection

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

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.

Personal hygiene is a key element of effective hand care.

AlphaLISA CaptSure™ Acceptor Beads (2mg/mL)

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

• polychloroprene.

• nitrile rubber.

• butyl rubber.

See Other protection below

No special equipment needed when handling small quantities.

OTHERWISE:

• Overalls.

• Barrier cream.

• Evewash unit.

Respiratory protection

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

- · Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- · Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- · Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- · Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- · Use approved positive flow mask if significant quantities of dust becomes airborne
- · Try to avoid creating dust conditions.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties White Lyophilysed pellet Appearance Physical state Divided Solid Relative density (Water = 1) Not Available Partition coefficient n-octanol Odour Not Available Not Available Auto-ignition temperature Odour threshold Not Available Not Applicable (°C) Decomposition pH (as supplied) Not Applicable Not Available temperature (°C) Melting point / freezing point Not Available Viscosity (cSt) Not Available (°C) Initial boiling point and Not Available Molecular weight (g/mol) Not Applicable boiling range (°C) Flash point (°C) Not Applicable Taste Not Available **Evaporation rate** Not Available **Explosive properties** Not Available Flammability Not Applicable Oxidising properties Not Available Surface Tension (dyn/cm or Upper Explosive Limit (%) Not Applicable Not Applicable Lower Explosive Limit (%) Not Applicable Volatile Component (%vol) Not Available Vapour pressure (kPa) Not Available Gas group Not Available Solubility in water Miscible pH as a solution (1%) Not Available Vapour density (Air = 1) Not Available VOC g/L Not Available Heat of Combustion (kJ/g) Not Available Ignition Distance (cm) Not Available Flame Duration (s) Flame Height (cm) Not Available Not Available **Enclosed Space Ignition Enclosed Space Ignition** Not Available Not Available Time Equivalent (s/m3) Deflagration Density (g/m3)

SECTION 10 Stability and reactivity

| Reactivity | See section 7 |
|------------------------------------|---|
| Chemical stability | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

Information on toxicological effects

Inhale

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

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Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack Ingestion of corroborating animal or human evidence The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an Skin Contact occupational setting. Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient Eve discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Chronic Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung. TOXICITY IRRITATION AlphaLISA CaptSure™ Acceptor Beads (2mg/mL) Not Available Not Available TOXICITY IRRITATION dermal (rat) LD50: >1008 mg/kg^[1] Eye: adverse effect observed (irreversible damage) $^{[1]}$ isothiazolinones, mixed Inhalation (Rat) LC50: 0.171 mg/l4h^[1] Skin: adverse effect observed (corrosive)^[1] Oral (Rat) LD50: 53 mg/kg^[2] Skin: adverse effect observed (irritating)[1] 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise Legend: specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

The following information refers to contact allergens as a group and may not be specific to this product.

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.

In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance.

Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by non-professional users.

ISOTHIAZOLINONES, MIXED

Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%. The use of formaldehyde-releasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

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.

Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.

AlphaLISA CaptSure™ Acceptor Beads (2mg/mL) & ISOTHIAZOLINONES, MIXED

No significant acute toxicological data identified in literature search.

| 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

SECTION 12 Ecological information

Toxicity

| AlphaLISA CaptSure™ Acceptor Beads (2mg/mL) | Not Available | Test Duration (hr) Not Available | Species Not Available | Value Not Available | Source Not Available |
|--|------------------|-----------------------------------|-------------------------------|---------------------------|----------------------------|
| isothiazolinones, mixed | Endpoint | Test Duration (hr) | Species | Value | Source |
| | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/l | 2 |

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| LC50 | 96h | Fish | 0.129mg/l | 2 |
|-----------|-----|-------------------------------|------------|---|
| EC50 | 96h | Algae or other aquatic plants | 0.036mg/L | 2 |
| NOEC(ECx) | 48h | Algae or other aquatic plants | <0.001mg/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

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air | |
|------------|---------------------------------------|---------------------------------------|--|
| | No Data available for all ingredients | No Data available for all ingredients | |

Bioaccumulative potential

| | Bioaccumulation | |
|---------------------------------------|-----------------|--|
| No Data available for all ingredients | | |

Mobility in soil

| Ingredient | Mobility |
|------------|---------------------------------------|
| | No Data available for all ingredients |

SECTION 13 Disposal considerations

Waste treatment methods

| Product / Packaging disposal | Consult State Land Waste Management Authority for disposal. |
|------------------------------|---|
|------------------------------|---|

SECTION 14 Transport information

Labels Required

| Marine Pollutant | NO |
|------------------|----|

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

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

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

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 |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|-------------------------|---------------|
| isothiazolinones, mixed | Not Available |

SECTION 15 Regulatory information

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

isothiazolinones, mixed is found on the following regulatory lists

Not Applicable

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
|---|----|
| Gas under pressure | No |
| Explosive | No |
| Self-heating Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| | No |
| Corrosive to metal | No |

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| Oxidizer (Liquid, Solid or Gas) | No |
|--|----|
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | No |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |
| Simple Asphyxiant | No |
| Hazards Not Otherwise Classified | No |

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

None Reported

Additional State Regulatory Information

Not Applicable

National Inventory Status

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

SECTION 16 Other information

| Revision Date | 25/10/2022 |
|---------------|------------|
| Initial Date | 13/07/2022 |

SDS Version Summary

| Version | Date of Update | Sections Updated |
|---------|----------------|--|
| 3.1 | 25/10/2022 | Disposal considerations - Disposal, Handling and storage - Storage (storage incompatibility) |

Other information

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

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

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AlphaLISA CaptSure™ Acceptor Beads (2mg/mL)

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 StandardOSF: 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
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ 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

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TEL (+61 3) 9572 4700.



Alpha Streptavidin Donor Beads (2mg/mL) TGR BioSciences Pty Ltd (an Abcam Company)

Chemwatch: **5555-08**Version No: **4.1**Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **25/10/2022** Print Date: **19/09/2024** S.GHS.USA.EN.E

SECTION 1 Identification

| Product Identifier | | |
|-------------------------------|---|--|
| Product name | Alpha Streptavidin Donor Beads (2mg/mL) | |
| Chemical Name | Not Applicable | |
| Synonyms | Not Available | |
| Chemical formula | Not Applicable | |
| Other means of identification | Not Available | |

Recommended use of the chemical and restrictions on use

| Relevant identified uses | Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use. |
|--------------------------|--|
| Relevant identified uses | Use according to manufacturer's directions. |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| - · · · · · · · · · · · · · · · · · · · | | |
|---|--|--|
| Registered company name | TGR BioSciences Pty Ltd (an Abcam Company) | |
| Address | Unit 3-4, 31 George Street Thebarton SA 5031 Australia | |
| Telephone | +61 08 7228 2141 | |
| Fax | Not Available | |
| Website | www.tgrbiosciences.com | |
| Email | ADE.info@abcam.com | |

Emergency phone number

| Association / Organisation Chemtrec Aus/North America/Revvity | | |
|---|-----------------------------------|------------------------------------|
| | | Chemtrec Aus/North America/Revvity |
| | Emergency telephone numbers | +61290372994 (Mon-Fri 8am to 5pm) |
| | Other emergency telephone numbers | +1703-527-3887/+31505445971 |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Not considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| Classification | Not Applicable |
|---------------------|----------------|
| | |
| Label elements | |
| Hazard pictogram(s) | Not Applicable |
| | |
| Signal word | Not Applicable |

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Not Applicable

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501

Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| Not Available | 100 | Ingredients determined not to be hazardous |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

| Eye Contact | If this product comes in contact with eyes: Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
|--------------|--|
| Skin Contact | If skin or hair contact occurs: Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation. |
| Inhalation | If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. |
| Ingestion | Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. In such an event consider:

foam.

Special hazards arising from the substrate or mixture

| Fire Incompatibility | None known. |
|----------------------|-------------|
|----------------------|-------------|

Special protective equipment and precautions for fire-fighters

Fire Fighting Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. The material is not readily combustible under normal conditions. However, it will break down under fire conditions and the organic component may burn. Not considered to be a significant fire risk. Heat may cause expansion or decomposition with violent rupture of containers. Decomposes on heating and produces toxic fumes of: carbon dioxide (CO2) nitrogen oxides (NOx) other pyrolysis products typical of burning organic material.

SECTION 6 Accidental release measures

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Personal precautions, protective equipment and emergency procedures

See section 8

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Environmental precautions

See section 12

Methods and material for containment and cleaning up

| methods and material for conte | annient and cleaning up |
|--------------------------------|---|
| Minor Spills | Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. |
| Major Spills | Minor hazard. ► Clear area of personnel. ► Alert Fire Brigade and tell them location and nature of hazard. ► Control personal contact with the substance, by using protective equipment as required. |

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

SECTION 7 Handling and storage

| Precautions for safe handling | |
|-------------------------------|--|
| Safe handling | Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. |
| Other information | Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. |

Conditions for safe storage, including any incompatibilities

| Suitable container | Brown tube or brown bottle. Polyethylene or polypropylene container. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks. |
|-------------------------|--|
| Storage incompatibility | None known |

SECTION 8 Exposure controls / personal protection

when making a final choice.

Personal hygiene is a key element of effective hand care.

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | | TEEL-3 |
|--|---------------|---------------|---------------|---------------|
| Alpha Streptavidin Donor Beads (2mg/mL) | Not Available | Not Available | | Not Available |
| Ingredient | Original IDLH | | Revised IDLH | |
| Alpha Streptavidin Donor Beads (2mg/mL) | Not Available | | Not Available | |

Exposure 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. Appropriate engineering The basic types of engineering controls are: controls Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Individual protection measures, such as personal protective equipment ▶ Safety glasses with side shields Chemical goggles. Eye and face protection Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Skin protection See Hand protection below ▶ Wear general protective gloves, eg. light weight rubber gloves. 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 Hands/feet protection advance and has therefore to be checked prior to the application

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed

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| Body protection | See Other protection below |
|------------------|---|
| Other protection | No special equipment needed when handling small quantities. OTHERWISE: Overalls. Barrier cream. Eyewash unit. |

SECTION 9 Physical and chemical properties

| Appearance | Blue liquid; mixes with water. | | |
|---|--------------------------------|--|----------------|
| Physical state | Liquid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Available | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |
| Heat of Combustion (kJ/g) | Not Available | Ignition Distance (cm) | Not Available |
| Flame Height (cm) | Not Available | Flame Duration (s) | Not Available |
| Enclosed Space Ignition Time Equivalent (s/m3) | Not Available | Enclosed Space Ignition Deflagration Density (g/m3) | Not Available |

SECTION 10 Stability and reactivity

| Reactivity | See section 7 |
|------------------------------------|---|
| Chemical stability | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

| Information | on | toxicological | effects |
|-------------|----|---------------|---------|

| ormation on toxicological el | fects | | |
|--|---|--|--|
| Inhaled | Not normally a hazard due to non-volatile nature of product The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. | | |
| Ingestion | 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. | | |
| Skin Contact | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. | | |
| Eye | Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). | | |
| Chronic | Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. | | |
| Alpha Streptavidin Donor Beads (2mg/mL) | TOXICITY | IRRITATION | |
| | Not Available | Not Available | |
| Legend: | Value obtained from Europe ECHA Regist specified data extracted from RTECS - Regist | ered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise ster of Toxic Effect of chemical Substances | |

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Alpha Streptavidin Donor Beads (2mg/mL)

Issue Date: 25/10/2022
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| Alpha Streptavidin Donor Beads (2mg/mL) | No significant acute toxicological data identified in literature search. | | |
|--|--|--------------------------|---|
| 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: X – Data either not available or does not fill the criteria for classification

v – Data available to make classification

SECTION 12 Ecological information

Toxicity

Version No: 4.1

| Alaba Ctaratta didia Dan ar | Endpoint | Test Duration (hr) | Species | Value | Source |
|--|--|--------------------|---------------|------------------|------------------|
| Alpha Streptavidin Donor Beads (2mg/mL) | Not Available | Not Available | Not Available | Not Available | Not Available |
| 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 | | | | |

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|---------------------------------------|---------------------------------------|
| | No Data available for all ingredients | No Data available for all ingredients |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|------------------|---------------------------------------|
| | No Data available for all ingredients |
| Mobility in soil | |

| Ingredient | Mobility |
|------------|---------------------------------------|
| | No Data available for all ingredients |

SECTION 13 Disposal considerations

| Waste treatment r | nethods |
|-------------------|---------|
|-------------------|---------|

Product / Packaging disposal Consult State Land Waste Management Authority for disposal.

SECTION 14 Transport information

Labels Required

| · | |
|------------------|----|
| Marine Pollutant | NO |

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

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

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

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 | |
|--------------------------|-----------------------------------|--|
| | | |
| 14.7.3. Transport in bul | k in accordance with the IGC Code | |
| Product name | Shin Tyne | |

SECTION 15 Regulatory information

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

Additional Regulatory Information

Not Applicable

Federal Regulations

Version No: 4.1

Alpha Streptavidin Donor Beads (2mg/mL)

Issue Date: **25/10/2022**Print Date: **19/09/2024**

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
|--|----|
| Gas under pressure | No |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | No |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |
| Simple Asphyxiant | No |
| Hazards Not Otherwise Classified | No |

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

None Reported

Additional State Regulatory Information

Not Applicable

National Inventory Status

| reactional involvery otatao | |
|---|--|
| National Inventory | Status |
| Australia - AIIC / Australia Non- Industrial Use | Not Available |
| Canada - DSL | Not Available |
| Canada - NDSL | Not Available |
| China - IECSC | Not Available |
| Europe - EINEC / ELINCS / NLP | Not Available |
| Japan - ENCS | Not Available |
| Korea - KECI | Not Available |
| New Zealand - NZIoC | Not Available |
| Philippines - PICCS | Not Available |
| USA - TSCA | Not Available |
| Taiwan - TCSI | Not Available |
| Mexico - INSQ | Not Available |
| Vietnam - NCI | Not Available |
| Russia - FBEPH | Not Available |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

SECTION 16 Other information

| Revision Date | 25/10/2022 |
|---------------|------------|
| Initial Date | 12/07/2022 |

Chemwatch: 5555-08 Version No: 4.1

Alpha Streptavidin Donor Beads (2mg/mL)

Issue Date: 25/10/2022 Print Date: 19/09/2024

SDS Version Summary

| Version | Date of Update | Sections Updated | |
|---------|----------------|--|--|
| 3.1 | 16/08/2022 | Name | |
| 4.1 | 25/10/2022 | Disposal considerations - Disposal, Handling and storage - Storage (storage incompatibility) | |

Other information

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

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

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
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- 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

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TEL (+61 3) 9572 4700.



Positive Control Lysate - Ultra TGR BioSciences Pty Ltd (an Abcam Company)

Chemwatch: **5555-32**Version No: **4.1**Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **25/10/2022** Print Date: **19/09/2024** S.GHS.USA.EN.E

SECTION 1 Identification

| Product Identifier | |
|-------------------------------|---------------------------------|
| Product name | Positive Control Lysate - Ultra |
| Chemical Name | Not Applicable |
| Synonyms | Not Available |
| Chemical formula | Not Applicable |
| Other means of identification | Not Available |

Recommended use of the chemical and restrictions on use

| Relevant identified uses | Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use. |
|--------------------------|--|
| | Use according to manufacturer's directions. |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | TGR BioSciences Pty Ltd (an Abcam Company) | |
|-------------------------|--|--|
| Address | Unit 3-4, 31 George Street Thebarton SA 5031 Australia | |
| Telephone | +61 08 7228 2141 | |
| Fax | Not Available | |
| Website | www.tgrbiosciences.com | |
| Email | ADE.info@abcam.com | |

Emergency phone number

| Association / Organisation | Chemtrec Aus/North America/Revvity |
|-----------------------------------|------------------------------------|
| Emergency telephone numbers | +61290372994 (Mon-Fri 8am to 5pm) |
| Other emergency telephone numbers | +1703-527-3887/+31505445971 |

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Not considered a Hazardous Substance by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). Not classified as Dangerous Goods for transport purposes.

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| Classification | Not Applicable |
|---------------------|----------------|
| | |
| Label elements | |
| Hazard pictogram(s) | Not Applicable |
| | |
| Signal word | Not Applicable |

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Positive Control Lysate - Ultra

Issue Date: **25/10/2022**Print Date: **19/09/2024**

Not Applicable

Version No: 4.1

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

Not Applicable

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501

Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 55965-84-9 | <0.01 | isothiazolinones, mixed |
| 9002-93-1 | >0.1 | p-tert-octylphenol ethoxylate |
| Not Available | balance | Ingredients determined not to be hazardous |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

| Eye Contact | If this product comes in contact with eyes: • Wash out immediately with water. • If irritation continues, seek medical attention. • Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. | |
|--------------|--|--|
| Skin Contact | If skin or hair contact occurs: ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. | |
| Inhalation | If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary. | |
| Ingestion | Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. | |

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

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

Special hazards arising from the substrate or mixture

Fire Incompatibility None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
 Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- Fire/Explosion Hazard
- ▶ Non combustible
- Not considered a significant fire risk, however containers may burn.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Chemwatch: 5555-32 Version No: 4.1

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Issue Date: **25/10/2022**Print Date: **19/09/2024**

Methods and material for containment and cleaning up

| Minor Spills | Clean up all spills immediately. Avoid contact with skin and eyes. Wear impervious gloves and safety glasses. Use dry clean up procedures and avoid generating dust. |
|--------------|---|
| Major Spills | Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Control personal contact with the substance, by using protective equipment and dust respirator. Prevent spillage from entering drains, sewers or water courses. |

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- Other information
- ► Store in original containers.
- Keep containers securely sealed.
- ▶ Store in a cool, dry area protected from environmental extremes.
- Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container

- ▶ Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility

None known

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | | TEEL-3 |
|---------------------------------|---------------|---------------|---------------|---------------|
| Positive Control Lysate - Ultra | Not Available | Not Available | | Not Available |
| Ingredient | Original IDLH | | Revised IDLH | |
| | | | | |
| isothiazolinones, mixed | Not Available | | Not Available | |

Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|-------------------------------|--|----------------------------------|
| isothiazolinones, mixed | E | ≤ 0.1 ppm |
| p-tert-octylphenol ethoxylate | E | ≤ 0.1 ppm |
| 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. | |

Exposure controls

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. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Individual protection measures, such as personal protective equipment









Eye and face protection

- ▶ Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

Skin protection

See Hand protection below

Hands/feet protection

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.

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.

Personal hygiene is a key element of effective hand care.

Positive Control Lysate - Ultra

| | Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. • polychloroprene. • nitrile rubber. • butyl rubber. |
|------------------|--|
| Body protection | See Other protection below |
| Other protection | No special equipment needed when handling small quantities. OTHERWISE: Overalls. Barrier cream. Eyewash unit. |

Respiratory protection

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

- · Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- · Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- · Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- · Use approved positive flow mask if significant quantities of dust becomes airborne.
- · Try to avoid creating dust conditions.

SECTION 9 Physical and chemical properties

| Appearance | White Lyophilysed pellet. | | |
|--|---------------------------|---|----------------|
| Physical state | Divided Solid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Applicable | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Applicable |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |
| Heat of Combustion (kJ/g) | Not Available | Ignition Distance (cm) | Not Available |
| Flame Height (cm) | Not Available | Flame Duration (s) | Not Available |
| Enclosed Space Ignition Time Equivalent (s/m3) | Not Available | Enclosed Space Ignition Deflagration Density (g/m3) | Not Available |

SECTION 10 Stability and reactivity

| Reactivity | See section 7 |
|------------------------------------|---|
| Chemical stability | Product is considered stable and hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 Toxicological information

Information on toxicological effects

Inhale

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

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| Pessitive Courtrol Lysaise The motion of the proposed experts year between the country of the proposed experts and the control of the control of the proposed experts and the control of the control of the proposed experts and the control of the contro | | | | |
|--|-------------------------------|--|------------------|--|
| Sin Contact Sin Contact The recitable control types Foolitive Control types Logorith Logori | | disability if excessive concentrations of particulate are inhaled. If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be | | |
| The restartal is not fought to produce advance heath effects or eith initiation following contact (an desarted by CD inventions, and in information compatitions and interest of the compatition and interest of the compatition and interest on the c | Ingestion | | | |
| decoming of the control characterised by tearing or compacting and entires (see with windburn). Slight absorate eatings may also result. | Skin Contact | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an | | |
| Chronic Long removance in plant particles in present particles and particles are another of cause. Positive Control Lysae. In | Eye | Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient | | |
| Not Available Not Available Not Available Not Available | Chronic | animal models); nevertheless exposure by all routes should be minimised as a matter of course. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 | | |
| Not Available Not Available Not Available Not Available | Decitive Control I veets | TOXICITY IRRITATION | | |
| Softhiazolimones, mixed Inhabation (Fatal LCSIO 0.171 mg/sht ⁻¹ Silen: adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.171 mg/sht ⁻¹ Silen: adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.171 mg/sht ⁻¹ Silen: adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.171 mg/sht ⁻¹ Silen: adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.171 mg/sht ⁻¹ Silen: adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect observed (innersity) Inhabation (Fatal LCSIO 0.1800 mg/sht ⁻¹ Silen: Adverse effect effect observed (innersity) Inhabation (innersity) Inhabat | | | | |
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| Inhalation (Rut) LCSC: 0.171 mg/shl/1) Oral (Rat) LDSC: 50 mg/slg ⁻¹² Sixtin adverse effect observed (cornosive) ^[1] ptert-octylphenol ethoxylate TOXICITY IRRITATION Oral (Rat) LDSC: 1800 mg/slg ⁻¹² Eye (rabbit): 1 mg - moderate Sixtin (human): 2 mg/sd -1 - mid Legend: 1. Value obtained from FILESC: Register of State Effect of chemical Substances Sixtin (human): 2 mg/sd -1 - mid 1. Value obtained from FILESC: Register of State Effect of chemical Substances Sixtin (human): 2 mg/sd -1 - mid 1. Value obtained from FILESC: Register of State Effect of chemical Substances The following information refers to contact allergens as a group and may not be specific to this product. Contact allergins quickly manifest themselves as contact occurs, more rarely as utilication or Quincke's oederna. The pathogenesis of contact decreams involves a cell-mediated (T hymphocytes) immune reaction of the delayed type. Other allergic six in reactions, e.g. contact, uricans, involves antibody-mediated rimmune reactions. International contact involves a cell-mediated (T hymphocytes) immune reaction of the delayed type. Other allergic six involves into the manifest in the second orange of the second orange of the products of contact decreams and the environment to the initial seasonsment of the bloodial products are only to the second orange of the second oran | | | | fect observed (irreversible damage) ^[1] |
| P-TERT-OCTYLPHONO Cord (Rai) LD50: 83 mg/kg ^[2] Skin: adverse effect observed (imitating) ^[1] IRRITATION Oral (Rai) LD50: 1800 mg/kg ^[2] Eye (rabbi): 1 mg - moderate Skin (human): 2 mg/dd - mid Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute roxicity 2. Value obtained from manufacturer's SDS. Unless otherwise appealined date extracted from RTECS - Register of Toxic Effect of chemical Substances The following information refers to contact allergens as a group and may not be specific to this product. Contact allergens quickly manifest themselves as contact observances are contact allergens as a group and may not be specific to this product. Contact allerges quickly manifest themselves as contact observances are contact and product of contact and product and produ | isothiazolinones, mixed | | | |
| TOXICITY IRRITATION | | | | *** |
| P-tert-octylphenol sthoxylate Crail (Earl) LD50: 1800 mg/kg ^[2] Eye (rabbil): 1 mg - moderate Skin (human): 2 mg/60-1 - mid 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 - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Registered Substances - Acute toxicity 2. Value obtained from surfaces of contract and surfaces of toxicity 3 metal and surfaces of the surface of toxicity 3 metal and surfaces of the surface of toxicity 3 metal and surfaces of the surface of toxicity 3 metal and surfaces of the surface of the | | Ofal (Rat) LD50. 55 mg/kg ^c ² | iii. auveise ei | nect observed (irritating); 7 |
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| The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as utilicaria or Quincke's oedema. The pathogenesis of contact eczema involves a relicionate of the delayed by the allergies glicion for the delayed by the allergies glicion reactions, e.g. contact utilizatis, involves antibo-privated and immune reactions. Unitaria, involve antibo-privated and immune reactions. Unitaria in the required that in the season of the products of products on the manifest of applications and thus the exposure of humans and the environment to the biocidal substance. Humans may be exposed to biocidal products and interest ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by monitorial products and the products and an administrative entire that the level of free formalichelyde in the maximum authorial concentration of referomalichelyde in the reaction and the products and products and an administrative ensures that the level of free formalichelyde in the products in always and such as a s | | Sk | in (human): 2 | ! mg/3d -l - mild |
| Contact allergies quickly manifest themselves as contact eczena, more rarely as uniteriation of Outnote's oederma. The pathogenesis of contact eczena involves a cell-incellated (If ymphocytes) immune reactions of the delayed ymp. Chlera allergies desir reactions, e.g., contact urticaria, involve antibody-mediated immune reactions. In light of potential adverser effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this earn, it is required thair risk assessment of biocided products is element on the placed or the market. A central element in spiriture and the provision of the protection of human and animal health and the environment of applications and thus the exposure of humans and the environment to the biocidial substance. Humans may be exposed to biocidal products in effortent ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidial products are commonly available for private use by non-professional users. Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde in the products are intended for industrial sectors or professional users. Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration exceeds 0.05%. The user of formaldehyde in the products is always to with sufficient to inhibit microbial growth - if the material and by the initiating to the eye, with products or a concern hat foreign concentration exceeds 0.05%. The user of formaldehyde in the products is always to with sufficient to inhibit microbial growth - if the material and by the initiating to the eye, with products or a concern hat foreign sufficient products or cause of the substance. The material may be initiating to the eye, with prof | Legend: | | | |
| P-TERT-OCTYLPHENOL ETHOXYLATE P-TERT-OCTYLPHENOL (8 and below) were considered safe as used, whereas short-chain nonoxynols (8 and below) were considered safe as used in rinse-off products and seas used in rinse-off products and safe at concentrations less than 50% in leave-on formulations. Acute exposure of hamsters to Octoxynol-9 by bronchopulations as used in rinse-off products and seas used in rinse-off prod | ISOTHIAZOLINONES, MIXED | In light of potential adverse effects, and to ensure a harmonised risk assessment and management, the EU regulatory framework for biocides has been established with the objective of ensuring a high level of protection of human and animal health and the environment. To this aim, it is required that risk assessment of biocidal products is carried out before they can be placed on the market. A central element in the risk assessment of the biocidal products are the utilization instructions that defines the dosage, application method and amount of applications and thus the exposure of humans and the environment to the biocidal substance. Humans may be exposed to biocidal products in different ways in both occupational and domestic settings. Many biocidal products are intended for industrial sectors or professional uses only, whereas other biocidal products are commonly available for private use by non-professional users. Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%. The use of formaldehyde-releasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. 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. Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condi | | |
| Vitra & ISOTHIAZOLINONES, MIXED No significant acute toxicological data identified in literature search. | | Octoxynols of various chain lengths as well as octoxynol salts and organic acids function in cosmetics either as surfactants-emulsifying agents, surfactants-cleansing agents, surfactant-solubilizing agents, or surfactants-hydrotropes in a wide variety of cosmetic products at concentrations ranging from 0.0008% to 25%, with most less than 5.0%. The octoxynols are chemically similar to nonoxynols Long-chain nonoxynols (9 and above) were considered safe as used, whereas short-chain nonoxynols (8 and below) were considered safe as used in rinse-off products and safe at concentrations less than 5% in leave-on formulations. Acute exposure of hamsters to Octoxynol-9 by bronchopulmonary lavage produced pneumonia, pulmonary edema, and intra-alveolar hemorrhage. Humans have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents and other cleaning products. Exposure to these chemicals can occur through swallowing, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that relatively high volumes would have to occur to produce any toxic response. No death due to poisoning with alcohol ethoxylates has ever been reported. Both laboratory and animal testing has shown that there is no evidence for alcohol ethoxylates (AEs) causing genetic damage, mutations or | | |
| Skin Irritation/Corrosion Serious Eye Damage/Irritation Respiratory or Skin X STOT - Repeated Exposure X STOT - Repeated Exposure | Ultra & ISOTHIAZOLINONES, | | | |
| Skin Irritation/Corrosion Serious Eye Damage/Irritation Respiratory or Skin X STOT - Repeated Exposure X STOT - Repeated Exposure | Acute Toxicity | X | nogenicity | × |
| Damage/Irritation Respiratory or Skin | · | | | |
| Respiratory or Skin | • | X STOT - Single | Exposure | × |
| sensitisation Sensitisation | Respiratory or Skin | X STOT - Repeated Exposure X | | |

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Mutagenicity X Aspiration Hazard

Legend: X – Data either not available or does not fill the criteria for classification

- Data available to make classification

SECTION 12 Ecological information

Toxicity

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| Danisira Cantaal Larata | Endpoint | Test Duration (hr) | Species | Value | Source |
|------------------------------------|------------------|--------------------|---|------------------|------------------|
| Positive Control Lysate - Ultra | Not Available | Not Available | Not Available | Not Available | Not Available |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| isothiazolinones, mixed | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/l | 2 |
| | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 96h | Algae or other aquatic plants | 0.036mg/L | 2 |
| | NOEC(ECx) | 48h | Algae or other aquatic plants | <0.001mg/L | 2 |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| p-tert-octylphenol ethoxylate | LC50 | 96h | Fish | >2.8<3.2mg/L | 4 |
| | EC50(ECx) | 96h | Fish | 3mg/L | 5 |
| Legend: | Ecotox databas | | ECHA Registered Substances - Ecotoxicological Infor C Aquatic Hazard Assessment Data 6. NITE (Japan) | | |

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|-------------------------------|-------------------------|------------------|
| p-tert-octylphenol ethoxylate | HIGH | HIGH |

Bioaccumulative potential

| zioacoaiiiaiiio potoiiiai | |
|-------------------------------|-----------------------|
| Ingredient | Bioaccumulation |
| p-tert-octylphenol ethoxylate | HIGH (LogKOW = 4.863) |

Mobility in soil

| Ingredient | Mobility |
|-------------------------------|-----------------------|
| p-tert-octylphenol ethoxylate | LOW (Log KOC = 699.2) |

SECTION 13 Disposal considerations

Waste treatment methods

| Product / Packaging disposal Consult State Land Waste Management Authority for disposal. |
|--|
|--|

SECTION 14 Transport information

Labels Required

| Marine Pollutant | NO |
|------------------|----|

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

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

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

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 |
|-------------------------------|---------------|
| isothiazolinones, mixed | Not Available |
| p-tert-octylphenol ethoxylate | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|-------------------------------|---------------|
| isothiazolinones, mixed | Not Available |
| p-tert-octylphenol ethoxylate | Not Available |

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SECTION 15 Regulatory information

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

isothiazolinones, mixed is found on the following regulatory lists

Not Applicable

p-tert-octylphenol ethoxylate is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

| a continue in the individual categories | |
|--|----|
| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
| Gas under pressure | No |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | No |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |
| Simple Asphyxiant | No |
| Hazards Not Otherwise Classified | No |

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

None Reported

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

None Reported

Additional State Regulatory Information

Not Applicable

National Inventory Status

| National Inventory Status | | | |
|---|---|--|--|
| National Inventory | Status | | |
| Australia - AIIC / Australia Non- Industrial Use | No (isothiazolinones, mixed) | | |
| Canada - DSL | Yes | | |
| Canada - NDSL | No (isothiazolinones, mixed; p-tert-octylphenol ethoxylate) | | |
| China - IECSC | Yes | | |
| Europe - EINEC / ELINCS / NLP | No (isothiazolinones, mixed; p-tert-octylphenol ethoxylate) | | |
| Japan - ENCS | Yes | | |
| Korea - KECI | Yes | | |
| New Zealand - NZIoC | Yes | | |

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| National Inventory | Status | | |
|---------------------|--|--|--|
| Philippines - PICCS | Yes | | |
| USA - TSCA | No (isothiazolinones, mixed) | | |
| Taiwan - TCSI | Yes | | |
| Mexico - INSQ | No (isothiazolinones, mixed; p-tert-octylphenol ethoxylate) | | |
| Vietnam - NCI | Yes | | |
| Russia - FBEPH | Yes | | |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. | | |

SECTION 16 Other information

| Revision Date | 25/10/2022 |
|---------------|------------|
| Initial Date | 19/07/2022 |

SDS Version Summary

| Version | Date of Update | Sections Updated |
|---------|-------------------|---|
| 3.1 | 31/08/2022 | Composition / information on ingredients - Ingredients |
| 4.1 | 25/10/2022 | Disposal considerations - Disposal, Handling and storage - Storage (storage incompatibility), Handling and storage - Storage (suitable container) |

Other information

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

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

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
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ 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

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