Trade Name: AlphaLISA SureFire® Ultra™ Detection Kit

# Human and Mouse Total ATF-4 Detection Kit

**Article numbers:**

ALSU-TATF4-A500 ALSU-TATF4-A10K ALSU-TATF4-A50K ALSU-TATF4-A-HV ALSU-TATF4-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 | Hazard Identification | |
|---|---|---|---|---|---|---|
| Lysis Buffer (5X) | 1 x 12 mL | 1 x 12 mL | 4 x 60 mL | 3 x 400 mL | | GHS07; H319 |
| Activation Buffer | 1 x 0.3 mL | 1 x 0.8 mL | 1 x 10 mL | 1 x 50 mL | | GHS07; H319 |
| Dilution Buffer | 1 x 1.8 mL | 1 x 3 mL | 1 x 60 mL | 1 x 300 mL | N/A; | N/A; |
| Reaction Buffer 1 - *Ultra* | 1 x 0.9 mL | 1 x 1.5 mL | 1 x 28 mL | 1 x 140 mL | N/A; | N/A; |
| Reaction Buffer 2 - *Ultra* | 1 x 0.9 mL | 1 x 1.5 mL | 1 x 28 mL | 1 x 140 mL | N/A; | N/A; |
| AlphaLISA® Capt*Sure* ™ 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; | N/A; |
| 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; | N/A; |

**Components and Hazard Identification for Individual Sale items**

| Composition | | Hazards identification | |
|---|---|---|---|
| ALSU-AB-100ml<br>ALSU-AB-10ml | Activation Buffer | | GHS07; H319 |
| ALSU-ABB-100ml<br>ALSU-ABB-10ml | Activation Buffer B | N/A; | N/A; |
| ALSU-ABC-100ml<br>ALSU-ABC-10ml | Activation Buffer C | | GHS05; H318 |
| ALSU-DB-100ml<br>ALSU-DB-10ml | Dilution Buffer | N/A; | N/A; |
| ALSU-LB-100mL<br>ALSU-LB-10mL | Lysis Buffer (5x) | | GHS07; H319 |
| ALSU-LBB-100mL<br>ALSU-LBB-10mL | Lysis Buffer B (5x) | N/A; | N/A; |
| ALSU-LBC-100mL<br>ALSU-LBC-10mL | Lysis Buffer C (5x) | N/A; | N/A; |
| ALSU-***-A-L | Positive Control Lysate | N/A; | N/A; |
| ALSU-ACAB-0.06mL<br>ALSU-ACAB-1.2mL<br>ALSU-ACAB-6mL | AlphaLISA® Capt*Sure* ™ Acceptor Beads (2 mg/mL) | N/A; | N/A; |
| ALSU-ASDB-0.06mL<br>ALSU-ASDB-1.2mL<br>ALSU-ASDB-6mL | Alpha Streptavidin Donor Beads (2 mg/mL) | N/A; | N/A; |

*** = assay target name

**Revvity, Inc.**
940 Winter Street
Waltham, MA 02451 USA
(800) 762-4000
www.revvity.com



Copyright ©2023, Revvity, Inc. All rights reserved.

# Activation Buffer - Ultra

## TGR BioSciences Pty Ltd.

Chemwatch: **5555-09**
Version No: **4.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **25/10/2022**
Print Date: **22/01/2024**
S.GHS.USA.EN.E

## SECTION 1 Identification

### Product Identifier

| | |
|---|---|
| **Product name** | Activation Buffer - Ultra |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Activation Buffer A |
| **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.<br>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.** |
| **Address** | (an Abcam Company) Unit 3, 31 George Street, Thebarton, SA 5031 Australia |
| **Telephone** | +61 8 7228 2141 |
| **Fax** | Not Available |
| **Website** | www.tgrbio.com |
| **Email** | ADE.info@abcam.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **Chemtrec Aus/North America/Revvity** |
| **Emergency telephone numbers** | +61 2 9037 2994 |
| **Other emergency telephone numbers** | +1 703 527 3887 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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)** | |

**Page 1 continued...**

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

**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 |
|---|---|---|
| 151-21-3 | <5 | sodium lauryl sulfate |
| 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 the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ Immediately give a glass of water.<br>▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

**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**

**Continued...**

| | |
|---|---|
| **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.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ The material is not readily combustible under normal conditions.<br>▸ However, it will break down under fire conditions and the organic component may burn.<br>▸ Not considered to be a significant fire risk.<br>▸ Heat may cause expansion or decomposition with violent rupture of containers.<br><br>Decomposes on heating and produces toxic fumes of:<br>carbon dioxide ($CO_2$)<br>nitrogen oxides (NOx)<br>sulfur oxides (SOx)<br>other pyrolysis products typical of burning organic material. |

## SECTION 6 Accidental release measures

### 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.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Moderate hazard.<br>▸ Clear area of personnel and move upwind.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ 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<br>▸ Avoid all personal contact, including inhalation.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ Prevent concentration in hollows and sumps. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | Plastic tube or Plastic Bottle<br>▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ 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 |
|---|---|---|---|
| sodium lauryl sulfate | 3.9 mg/m3 | 43 mg/m3 | 260 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| sodium lauryl sulfate | Not Available | Not Available |
| isothiazolinones, mixed | Not Available | Not Available |

**Occupational Exposure Banding**

**Continued...**

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|---|---|---|
| sodium lauryl sulfate | E | ≤ 0.01 mg/m³ |
| 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.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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.<br>▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]<br>▸ 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** | See Hand protection below |
| **Hands/feet protection** | ▸ Wear chemical protective gloves, e.g. PVC.<br>▸ Wear safety footwear or safety gumboots, e.g. Rubber<br>**NOTE:**<br>▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.<br>▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.<br>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>Personal hygiene is a key element of effective hand care. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ P.V.C apron.<br>▸ Barrier cream.<br>▸ 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 |

**Continued...**

| | | | |
|---|---|---|---|
| **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 |

## SECTION 10 Stability and reactivity

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | ▸ Unstable in the presence of incompatible materials.<br>▸ Product is considered stable.<br>▸ 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<br>The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| **Ingestion** | Considered an unlikely route of entry in commercial/industrial environments<br>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum. |
| **Skin Contact** | There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| **Eye** | This material can cause eye irritation and damage in some persons. |
| **Chronic** | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.<br>There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.<br>There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population. |

| | | |
|---|---|---|
| **Activation Buffer - Ultra** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **sodium lauryl sulfate** | **TOXICITY** | **IRRITATION** |
| | dermal (rat) LD50: >2000 mg/kg[1] | Eye (rabbit):100 mg/24 hr-moderate |
| | Oral (Rat) LD50: 1288 mg/kg[2] | Eye: adverse effect observed (irritating)[1] |
| | | Skin (human): 25 mg/24 hr - mild |
| | | Skin: adverse effect observed (irritating)[1] |
| **isothiazolinones, mixed** | **TOXICITY** | **IRRITATION** |
| | 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:*** | *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* |

| | |
|---|---|
| **SODIUM LAURYL SULFATE** | Eye (None) None: None None rabbit None 250 ugSkin (rabbit):25 mg/24 hr-moderate Skin (None) None: None rabbit None 50 mg/24Eye (rabbit) 10: mg-<br>Based on laboratory and animal testing, exposure to the material may result in irreversible effects and mutations in humans.<br>Alkyl sulfates are irritating to the skin, harmful if swallowed and at risk of causing serious damage to the eyes. They are metabolised by the liver and excreted via urine. They produce dose-dependent toxicity depending on their structure. They do not cause cancer, reproductive or genetic defects.<br>For alkyl sulfates; alkane sulfonates and alpha-olefin sulfonates<br>Most chemicals of this category are not defined substances, but mixtures of homologues with different alkyl side chains. Common physical and/or biological pathways result in structurally similar breakdown products, and are, together with the surfactant properties, responsible for similar environmental behavior and essentially identical hazard profiles with regard to human health.<br>Acute toxicity: These substances are well absorbed after ingestion; penetration through the skin is however, poor. After absorption, these chemicals are distributed mainly to the liver.<br>In animals, signs of poisoning by mouth include lethargy, hair standing up, decreased motor activity and breathing rate, and diarrhea. Poisoning from skin contact caused irritation, tremor, tonic-clonic convulsions, breathing failure, and weight loss. |

**Continued...**

| | |
|---|---|
| **ISOTHIAZOLINONES, MIXED** | The following information refers to contact allergens as a group and may not be specific to this product.<br>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.<br>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.<br>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.<br>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.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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. |
| **SODIUM LAURYL SULFATE & ISOTHIAZOLINONES, MIXED** | 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

**Activation Buffer - Ultra**

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

**sodium lauryl sulfate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 72h | Algae or other aquatic plants | 4.8mg/l | 2 |
| EC50 | 48h | Crustacea | 0.939mg/l | 1 |
| EC50 | 96h | Algae or other aquatic plants | 0.4-3.7mg/l | 4 |
| LC50 | 96h | Fish | 0.59mg/l | 4 |
| EC0(ECx) | 72h | Algae or other aquatic plants | 30mg/l | 1 |

**isothiazolinones, mixed**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | 0.129mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| EC50 | 48h | Crustacea | 0.007mg/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*

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| sodium lauryl sulfate | HIGH | HIGH |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|

**Continued...**

| Ingredient | Bioaccumulation |
|---|---|
| sodium lauryl sulfate | LOW (BCF = 7.15) |

**Mobility in soil**

| Ingredient | Mobility |
|---|---|
| sodium lauryl sulfate | LOW (KOC = 10220) |

## 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 |
|---|---|
| sodium lauryl sulfate | Not Available |
| isothiazolinones, mixed | Not Available |

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

| Product name | Ship Type |
|---|---|
| sodium lauryl sulfate | Not Available |
| isothiazolinones, mixed | Not Available |

## SECTION 15 Regulatory information

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

**sodium lauryl sulfate is found on the following regulatory lists**

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**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 |

**Continued...**

| | |
|---|---|
| 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)**

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 | No (isothiazolinones, mixed) |
| 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*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

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

### SDS Version Summary

| Version | Date of Update | Sections Updated |
|---|---|---|
| 3.2 | 25/10/2022 | Identification of the substance / mixture and of the company / undertaking - Synonyms, Name |
| 4.1 | 25/10/2022 | Disposal considerations - Disposal |

### 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.

**Continued...**

**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

This document is copyright.
Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.
TEL (+61 3) 9572 4700.

# Dilution Buffer - Ultra

## TGR BioSciences Pty Ltd.

Chemwatch: **5555-18**
Version No: **4.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **25/10/2022**
Print Date: **22/01/2024**
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

| | |
|---|---|
| **Relevant identified uses** | Use of Substances/mixtures for Laboratory Research Use Only. Do Not Use for diagnostic, therapeutic or clinical use.<br>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.** |
| **Address** | (an Abcam Company) Unit 3, 31 George Street, Thebarton, SA 5031 Australia |
| **Telephone** | +61 8 7228 2141 |
| **Fax** | Not Available |
| **Website** | www.tgrbio.com |
| **Email** | ADE.info@abcam.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **Chemtrec Aus/North America/Revvity** |
| **Emergency telephone numbers** | +61 2 9037 2994 |
| **Other emergency telephone numbers** | +1 703 527 3887 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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)

**Page 1 continued...**

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

**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** | ▸ 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** | ▸ Use water delivered as a fine spray to control fire and cool adjacent area.<br>▸ **Do not** approach containers suspected to be hot.<br>▸ Cool fire exposed containers with water spray from a protected location.<br>▸ If safe to do so, remove containers from path of fire. |
| **Fire/Explosion Hazard** | ▸ The material is not readily combustible under normal conditions.<br>▸ However, it will break down under fire conditions and the organic component may burn.<br>▸ Not considered to be a significant fire risk.<br>▸ Heat may cause expansion or decomposition with violent rupture of containers.<br>Decomposition may produce toxic fumes of:<br>carbon dioxide ($CO_2$) |

**Continued...**

| | |
|---|---|
| | other pyrolysis products typical of burning organic material. |

## SECTION 6 Accidental release measures

### 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.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ 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.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ Avoid contact with incompatible materials. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | Plastic tube or plastic bottle.<br>▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ 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**

| 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.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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. |

**Continued...**

| | |
|---|---|
| **Individual protection measures, such as personal protective equipment** | |
| **Eye and face protection** | ‣ "Safety glasses with side shields<br>‣ Chemical goggles.<br>‣ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. 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** | ‣ Wear general protective gloves, eg. light weight rubber gloves.<br>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>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.<br>**OTHERWISE:**<br>‣ Overalls.<br>‣ Barrier cream.<br>‣ 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** | 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 |

## 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. |

**Continued...**

| | |
|---|---|
| **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. |

| | | |
|---|---|---|
| **Dilution Buffer - Ultra** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **isothiazolinones, mixed** | **TOXICITY** | **IRRITATION** |
| | 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:*** | *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* |

| | |
|---|---|
| **ISOTHIAZOLINONES, MIXED** | The following information refers to contact allergens as a group and may not be specific to this product.<br>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.<br>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.<br>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.<br>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.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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.<br>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

| | | | | | |
|---|---|---|---|---|---|
| **Dilution Buffer - 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** |
| | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/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 |

**Continued...**

| | |
|---|---|
| ***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 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 |

**Continued...**

| | |
|---|---|
| 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 | No (isothiazolinones, mixed) |
| 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*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 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

**Continued...**

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

This document is copyright.
Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.
TEL (+61 3) 9572 4700.

# Lysis Buffer (5X) - Ultra

## TGR BioSciences Pty Ltd.

Chemwatch: **5555-13**
Version No: **7.2**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **06/10/2022**
Print Date: **22/01/2024**
S.GHS.USA.EN.E

## SECTION 1 Identification

### Product Identifier

| | |
|---|---|
| **Product name** | Lysis Buffer (5X) - Ultra |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Lysis Buffer (5X) A |
| **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.<br>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.** |
| **Address** | (an Abcam Company) Unit 3, 31 George Street, Thebarton, SA 5031 Australia |
| **Telephone** | +61 8 7228 2141 |
| **Fax** | Not Available |
| **Website** | www.tgrbio.com |
| **Email** | ADE.info@abcam.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **Chemtrec Aus/North America/Revvity** |
| **Emergency telephone numbers** | +61 2 9037 2994 |
| **Other emergency telephone numbers** | +1 703 527 3887 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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)** | |

**Page 1 continued...**

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

**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 |
|---|---|---|
| 9002-93-1 | <2.5 | p-tert-octylphenol ethoxylate |
| 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.

## SECTION 4 First-aid measures

**Description of first aid measures**

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ Immediately give a glass of water.<br>▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

**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** | ▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |

**Continued...**

### Special protective equipment and precautions for fire-fighters

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

## SECTION 6 Accidental release measures

### 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.<br>‣ Avoid breathing vapours and contact with skin and eyes.<br>‣ Control personal contact with the substance, by using protective equipment.<br>‣ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Moderate hazard.<br>‣ Clear area of personnel and move upwind.<br>‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ 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<br>‣ Avoid all personal contact, including inhalation.<br>‣ Wear protective clothing when risk of exposure occurs.<br>‣ Use in a well-ventilated area.<br>‣ Avoid contact with moisture. |
| **Other information** | ‣ Store in original containers.<br>‣ Keep containers securely sealed.<br>‣ Store in a cool, dry, well-ventilated area.<br>‣ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | Plastic Bottles<br>‣ Polyethylene or polypropylene container.<br>‣ Packing as recommended by manufacturer.<br>‣ 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 |
|---|---|---|

**Continued...**

| 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**

| 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.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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.<br>‣ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]<br>‣ 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** | See Hand protection below |
| **Hands/feet protection** | ‣ Wear chemical protective gloves, e.g. PVC.<br>‣ Wear safety footwear or safety gumboots, e.g. Rubber<br>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>Personal hygiene is a key element of effective hand care. |
| **Body protection** | See Other protection below |
| **Other protection** | ‣ Overalls.<br>‣ P.V.C apron.<br>‣ Barrier cream.<br>‣ 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 |

**Continued...**

| | | | |
|---|---|---|---|
| **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 |

## SECTION 10 Stability and reactivity

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | ▸ Unstable in the presence of incompatible materials.<br>▸ Product is considered stable.<br>▸ 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** | There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| **Eye** | This material can cause eye irritation and damage in some persons. |
| **Chronic** | Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.<br>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.<br>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** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **p-tert-octylphenol ethoxylate** | **TOXICITY** | **IRRITATION** |
| | Oral (Rat) LD50: 1800 mg/kg[2] | Eye (rabbit): 1 mg - moderate |
| | | Skin (human): 2 mg/3d -I - mild |
| **isothiazolinones, mixed** | **TOXICITY** | **IRRITATION** |
| | 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] |
| **sodium fluoride** | **TOXICITY** | **IRRITATION** |
| | dermal (rat) LD50: >2000 mg/kg[1] | Eye (rabbit): 20 mg/24h-moderate |
| | Oral (Rat) LD50: >25<2000 mg/kg[1] | |

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

| | |
|---|---|
| **P-TERT-OCTYLPHENOL ETHOXYLATE** | Octoxynols:<br>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.<br>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.<br>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. |

**Continued...**

| | |
|---|---|
| **ISOTHIAZOLINONES, MIXED** | The following information refers to contact allergens as a group and may not be specific to this product.<br>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.<br>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.<br>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.<br>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.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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. |
| **SODIUM FLUORIDE** | The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| **Lysis Buffer (5X) - Ultra & SODIUM FLUORIDE** | The substance is classified by IARC as Group 3:<br>**NOT** classifiable as to its carcinogenicity to humans.<br>Evidence of carcinogenicity may be inadequate or limited in animal testing. |
| **ISOTHIAZOLINONES, MIXED & SODIUM FLUORIDE** | 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

**Lysis Buffer (5X) - Ultra**

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

**p-tert-octylphenol ethoxylate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50(ECx) | 96h | Fish | 3mg/L | 5 |
| LC50 | 96h | Fish | >2.8<3.2mg/l | 4 |

**isothiazolinones, mixed**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | 0.129mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| EC50 | 48h | Crustacea | 0.007mg/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 |

**sodium fluoride**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| BCF | 672h | Fish | <0.66 | 7 |
| EC50 | 72h | Algae or other aquatic plants | >121.8mg/L | 4 |
| EC50 | 48h | Crustacea | 36.2mg/L | 5 |
| EC50 | 96h | Algae or other aquatic plants | 43mg/l | 2 |
| LC50 | 96h | Fish | 38-68mg/l | 4 |
| NOEC(ECx) | 2160h | Fish | 3.1mg/l | 4 |

***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*

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

**Continued...**

**Persistence and degradability**

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

**Bioaccumulative potential**

| 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 (KOC = 699.2) |
| sodium fluoride | LOW (KOC = 14.3) |

## 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 |
|---|---|
| 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

**Continued...**

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 |
| 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 | No (isothiazolinones, mixed) |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | No (isothiazolinones, mixed) |
| Taiwan - TCSI | Yes |

**Continued...**

| National Inventory | Status |
|---|---|
| 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*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 06/10/2022 |
| **Initial Date** | 12/07/2022 |

### SDS Version Summary

| Version | Date of Update | Sections Updated |
|---|---|---|
| 7.1 | 06/10/2022 | Disposal considerations - Disposal |
| 7.2 | 25/10/2022 | Disposal considerations - Disposal, 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。
- 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

This document is copyright.
Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.
TEL (+61 3) 9572 4700.

# Reaction Buffer 1 - Ultra

## TGR BioSciences Pty Ltd.

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

Issue Date: **25/10/2022**
Print Date: **22/01/2024**
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.<br>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.** |
| **Address** | (an Abcam Company) Unit 3, 31 George Street, Thebarton, SA 5031 Australia |
| **Telephone** | +61 8 7228 2141 |
| **Fax** | Not Available |
| **Website** | www.tgrbio.com |
| **Email** | ADE.info@abcam.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **Chemtrec Aus/North America/Revvity** |
| **Emergency telephone numbers** | +61 2 9037 2994 |
| **Other emergency telephone numbers** | +1 703 527 3887 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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)

**Page 1 continued...**

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

**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** | ▸ 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** | ▸ Use water delivered as a fine spray to control fire and cool adjacent area.<br>▸ **Do not** approach containers suspected to be hot.<br>▸ Cool fire exposed containers with water spray from a protected location.<br>▸ If safe to do so, remove containers from path of fire. |
| **Fire/Explosion Hazard** | ▸ The material is not readily combustible under normal conditions.<br>▸ However, it will break down under fire conditions and the organic component may burn.<br>▸ Not considered to be a significant fire risk.<br>▸ Heat may cause expansion or decomposition with violent rupture of containers.<br>Decomposition may produce toxic fumes of:<br>carbon dioxide ($CO_2$) |

**Continued...**

| | |
|---|---|
| | other pyrolysis products typical of burning organic material. |

## SECTION 6 Accidental release measures

### 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.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ 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.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ Avoid contact with incompatible materials. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | Plastic tube or plastic bottle.<br>▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ 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

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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. |

**Continued...**

| | |
|---|---|
| **Individual protection measures, such as personal protective equipment** | |
| **Eye and face protection** | ‣ "Safety glasses with side shields<br>‣ Chemical goggles.<br>‣ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. 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** | ‣ Wear general protective gloves, eg. light weight rubber gloves.<br>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>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.<br>**OTHERWISE:**<br>‣ Overalls.<br>‣ Barrier cream.<br>‣ 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** | 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 |

## 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. |

**Continued...**

| | |
|---|---|
| **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. |

| | | |
|---|---|---|
| **Reaction Buffer 1 - Ultra** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **isothiazolinones, mixed** | **TOXICITY** | **IRRITATION** |
| | 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:*** | *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* |

| | |
|---|---|
| **ISOTHIAZOLINONES, MIXED** | The following information refers to contact allergens as a group and may not be specific to this product.<br>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.<br>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.<br>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.<br>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.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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.<br>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** |
| | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/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 |

**Continued...**

| | |
|---|---|
| ***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 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 |

**Continued...**

| | |
|---|---|
| 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 | No (isothiazolinones, mixed) |
| 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*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 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

**Continued...**

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

This document is copyright.
Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.
TEL (+61 3) 9572 4700.

# AlphaLISA CaptSure™ Acceptor Beads (2mg/mL)

## TGR BioSciences Pty Ltd.

Chemwatch: **5555-20**
Version No: **3.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **25/10/2022**
Print Date: **22/01/2024**
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) (mIgG1) Acceptor Beads; Alpha 615 anti-p-ERK (mIgG1) 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.<br>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.** |
| **Address** | (an Abcam Company) Unit 3, 31 George Street, Thebarton, SA 5031 Australia |
| **Telephone** | +61 8 7228 2141 |
| **Fax** | Not Available |
| **Website** | www.tgrbio.com |
| **Email** | ADE.info@abcam.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **Chemtrec Aus/North America/Revvity** |
| **Emergency telephone numbers** | +61 2 9037 2994 |
| **Other emergency telephone numbers** | +1 703 527 3887 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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 1 continued...**

**Hazard statement(s)**

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

**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.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered a significant fire risk, however containers may burn. |

## SECTION 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**Continued...**

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid contact with skin and eyes.<br>▸ Wear impervious gloves and safety glasses.<br>▸ Use dry clean up procedures and avoid generating dust. |
| **Major Spills** | ▸ Clear area of personnel and move upwind.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment and dust respirator.<br>▸ 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.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ Avoid contact with incompatible materials. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry area protected from environmental extremes.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | Brown tube or bottle.<br>▸ Lined metal can, lined metal pail/ can.<br>▸ Plastic pail.<br>▸ Polyliner drum.<br>▸ Packing as recommended by manufacturer. |
| **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 |
|---|---|---|---|
| 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.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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** | |

**Continued...**

| | |
|---|---|
| **Eye and face protection** | "Safety glasses with side shields<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. 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.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>Personal hygiene is a key element of effective hand care.<br>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.<br>polychloroprene.<br>nitrile rubber.<br>butyl rubber. |
| **Body protection** | See Other protection below |
| **Other protection** | No special equipment needed when handling small quantities.<br>**OTHERWISE:**<br>Overalls.<br>Barrier cream.<br>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

### Information on basic 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 |

## 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 |

**Continued...**

| | |
|---|---|
| **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.<br>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.<br>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. |
| **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 material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. |
| **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.<br>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. |

| | | |
|---|---|---|
| **AlphaLISA CaptSure™ Acceptor Beads (2mg/mL)** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **isothiazolinones, mixed** | **TOXICITY** | **IRRITATION** |
| | 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:*** | *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* |

| | |
|---|---|
| **ISOTHIAZOLINONES, MIXED** | The following information refers to contact allergens as a group and may not be specific to this product.<br>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.<br>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.<br>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.<br>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.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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.<br>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*

**Continued...**

## SECTION 12 Ecological information

### Toxicity

| | | | | | |
|---|---|---|---|---|---|
| **AlphaLISA CaptSure™ Acceptor Beads (2mg/mL)** | **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** |
| | LC50 | 96h | Fish | 0.129mg/l | 2 |
| | EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.007mg/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 |

### 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**

**Continued...**

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 |
| 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 | No (isothiazolinones, mixed) |
| 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 |

**Continued...**

| National Inventory | Status |
|---|---|
| ***Legend:*** | *Yes = All CAS declared ingredients are on the inventory*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 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.

### 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

This document is copyright.
Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.
TEL (+61 3) 9572 4700.

# Alpha Streptavidin Donor Beads (2mg/mL)

## TGR BioSciences Pty Ltd.

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

Issue Date: **25/10/2022**
Print Date: **22/01/2024**
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.<br>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.** |
| **Address** | (an Abcam Company) Unit 3, 31 George Street, Thebarton, SA 5031 Australia |
| **Telephone** | +61 8 7228 2141 |
| **Fax** | Not Available |
| **Website** | www.tgrbio.com |
| **Email** | ADE.info@abcam.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **Chemtrec Aus/North America/Revvity** |
| **Emergency telephone numbers** | +61 2 9037 2994 |
| **Other emergency telephone numbers** | +1 703 527 3887 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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)

**Page 1 continued...**

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

**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.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ The material is not readily combustible under normal conditions.<br>▸ However, it will break down under fire conditions and the organic component may burn.<br>▸ Not considered to be a significant fire risk.<br>▸ Heat may cause expansion or decomposition with violent rupture of containers.<br><br>Decomposes on heating and produces toxic fumes of:<br>carbon dioxide ($CO_2$)<br>nitrogen oxides (NOx) |

**Continued...**

| | |
|---|---|
| | other pyrolysis products typical of burning organic material. |

## SECTION 6 Accidental release measures

### 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.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ 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.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ Avoid contact with incompatible materials. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | Brown tube or brown bottle.<br>▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ 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 |
|---|---|---|---|
| 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

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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<br>▸ Chemical goggles.<br>▸ 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 |

**Continued...**

| | |
|---|---|
| | and adsorption for the class of chemicals in use and an account of injury experience. |
| **Skin protection** | See Hand protection below |
| **Hands/feet protection** | ▸ Wear general protective gloves, eg. light weight rubber gloves.<br>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>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.<br>**OTHERWISE:**<br>▸ Overalls.<br>▸ Barrier cream.<br>▸ Eyewash unit. |

## SECTION 9 Physical and chemical properties

### Information on basic 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 |

## 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** | Not normally a hazard due to non-volatile nature of product<br>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. |

**Continued...**

| | TOXICITY | IRRITATION |
|---|---|---|
| **Alpha Streptavidin Donor Beads (2mg/mL)** | Not Available | Not Available |

| | |
|---|---|
| ***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* |

| | |
|---|---|
| **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:*** ✗ *– 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 |
|---|---|---|---|---|---|
| **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 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 |
|---|---|

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

| Product name | Ship Type |
|---|---|

**Continued...**

## SECTION 15 Regulatory information

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

**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 |
| 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 | 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 |

**Continued...**

| National Inventory | Status |
|---|---|
| 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*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

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

### 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) |

### 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

This document is copyright.
Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.
TEL (+61 3) 9572 4700.

**end of SDS**

# Positive Control Lysate - Ultra

## TGR BioSciences Pty Ltd.

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

Issue Date: **25/10/2022**
Print Date: **22/01/2024**
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.<br>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.** |
| **Address** | (an Abcam Company) Unit 3, 31 George Street, Thebarton, SA 5031 Australia |
| **Telephone** | +61 8 7228 2141 |
| **Fax** | Not Available |
| **Website** | www.tgrbio.com |
| **Email** | ADE.info@abcam.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **Chemtrec Aus/North America/Revvity** |
| **Emergency telephone numbers** | +61 2 9037 2994 |
| **Other emergency telephone numbers** | +1 703 527 3887 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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)

**Page 1 continued...**

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

**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.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered a significant fire risk, however containers may burn. |

## SECTION 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**Continued...**

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid contact with skin and eyes.<br>▸ Wear impervious gloves and safety glasses.<br>▸ Use dry clean up procedures and avoid generating dust. |
| **Major Spills** | ▸ Clear area of personnel and move upwind.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment and dust respirator.<br>▸ 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.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ Avoid contact with incompatible materials. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry area protected from environmental extremes.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ 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 |
| p-tert-octylphenol ethoxylate | 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.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>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** | |

**Continued...**

| | |
|---|---|
| **Eye and face protection** | ▸ "Safety glasses with side shields<br>▸ Chemical goggles.<br>▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. 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.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>Personal hygiene is a key element of effective hand care.<br>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.<br>▸ polychloroprene.<br>▸ nitrile rubber.<br>▸ butyl rubber. |
| **Body protection** | See Other protection below |
| **Other protection** | No special equipment needed when handling small quantities.<br>**OTHERWISE:**<br>▸ Overalls.<br>▸ Barrier cream.<br>▸ 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

### Information on basic 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 |

## 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 |

**Continued...**

| | |
|---|---|
| **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.<br>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.<br>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. |
| **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 material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. |
| **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.<br>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. |

| | | |
|---|---|---|
| **Positive Control Lysate - Ultra** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **isothiazolinones, mixed** | **TOXICITY** | **IRRITATION** |
| | 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] |
| **p-tert-octylphenol ethoxylate** | **TOXICITY** | **IRRITATION** |
| | Oral (Rat) LD50: 1800 mg/kg[2] | Eye (rabbit): 1 mg - moderate |
| | | Skin (human): 2 mg/3d -I - mild |

| | |
|---|---|
| ***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* |

| | |
|---|---|
| **ISOTHIAZOLINONES, MIXED** | The following information refers to contact allergens as a group and may not be specific to this product.<br>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.<br>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.<br>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.<br>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.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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.<br>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. |
| **P-TERT-OCTYLPHENOL ETHOXYLATE** | Octoxynols:<br>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.<br>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 |

**Continued...**

| | |
|---|---|
| | 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.<br>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. |
| **Positive Control Lysate - 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

**Positive Control Lysate - 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 |
|---|---|---|---|---|
| LC50 | 96h | Fish | 0.129mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | 0.006mg/L | 2 |
| EC50 | 48h | Crustacea | 0.007mg/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 |

**p-tert-octylphenol ethoxylate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50(ECx) | 96h | Fish | 3mg/L | 5 |
| LC50 | 96h | Fish | >2.8<3.2mg/l | 4 |

***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 |
|---|---|---|
| p-tert-octylphenol ethoxylate | HIGH | HIGH |

### Bioaccumulative potential

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

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| p-tert-octylphenol ethoxylate | LOW (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**

**Continued...**

### 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 |

## 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**

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

**Continued...**

**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; p-tert-octylphenol ethoxylate) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | No (isothiazolinones, mixed; p-tert-octylphenol ethoxylate) |
| Japan - ENCS | No (isothiazolinones, mixed) |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| 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*<br>*No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.* |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 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 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

**Continued...**

- 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

This document is copyright.
Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH.
TEL (+61 3) 9572 4700.