



29.08.2020

### Kit components

Product code	Description
<b>1662701</b> <b>1662701EDU</b>	<b>Protein Profiler Module Kit</b>

#### Components:

1610375	Precision Plus Protein Kaleidoscope Standards
1660010	Actin / Myosin Standard
1610610	Dithiothreitol (DTT)

## Safety Data Sheet according to WHS Regulations

Printing date 29.08.2020

Revision: 25.07.2020

Hazardous according to criteria of Safe Work Australia.

### 1 Identification

- **Product identifier**
- **Trade name:** Precision Plus Protein Kaleidoscope Standards
- **Article number:** 1610375, 1610375S, 1610375EDU, 1610395, 10022172
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories Pty. Ltd  
Level 5, 446 Victoria Road  
Gladesville NSW 2111  
Australia  
Tel 61-2-9914-2800 (1 800 224 354) Fax 61-2-9914-2888
- **Information department:** sales.australia@bio-rad.com
- **Emergency telephone number:** 61-2-9037-2994

### 2 Hazard(s) Identification

- **Classification of the substance or mixture**  
Acute Tox. 5 H333 May be harmful if inhaled.  
Skin Corr. 3 H316 Causes mild skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.
- **Label elements**
- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H333 May be harmful if inhaled.  
H316 Causes mild skin irritation.  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P264 Wash thoroughly after handling.  
P280 Wear eye protection / face protection.  
P304+P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P332+P313 If skin irritation occurs: Get medical advice/attention.

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

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

- **Chemical characterisation: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

56-81-5	glycerol	Acute Tox. 5, H303; Acute Tox. 5, H333	20-35%
151-21-3	sodium dodecyl sulphate	Acute Tox. 3, H311 Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335	1-2.5%

- **Additional information** For the wording of the listed hazard phrases refer to section 16.

### 4 First Aid Measures

- **Description of first aid measures**
- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing** Rinse mouth with water. Seek medical attention and appropriate follow-up.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

### 5 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.

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**Trade name: Precision Plus Protein Kaleidoscope Standards**

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- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**  
No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and Storage

- **Handling**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

**56-81-5 glycerol**

WES Long-term value: 10 mg/m<sup>3</sup>

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not necessary if room is well-ventilated.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**  
Safety glasses

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according to WHS Regulations

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**Trade name: Precision Plus Protein Kaleidoscope Standards**

Tightly sealed goggles.

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### 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Liquid
Colour:	Violet
Odour:	Rotten
Odour threshold:	Not determined.

· **pH-value at 20 °C:** 6.8

· **Change in condition**

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	100 °C

· **Flash point:** > 100 °C

· **Flammability (solid, gaseous)** Not applicable.

· **Ignition temperature:** 400 °C

· **Decomposition temperature:** Not determined.

· **Self igniting:** Product is not selfigniting.

· **Explosive properties:** Not determined.

· **Explosion limits:**

Lower:	0.9 Vol %
Upper:	Not determined.

· **Vapour pressure at 20 °C:** 23 hPa

· **Density:** Not determined

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water: Fully miscible

· **Partition coefficient: n-octanol/water:** Not determined.

· **Viscosity:**

dynamic:	Not determined.
kinematic:	Not determined.

· **Solvent content:**

Organic solvents:	30.0 %
Water:	66.2 %

**Solids content:** 3.8 %

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Trade name: Precision Plus Protein Kaleidoscope Standards

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· **Other information** No further relevant information available.

## 10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

## 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values that are relevant for classification:**

### 56-81-5 glycerol

Oral	LD50	4,090 mg/kg (mouse) 12,600 mg/kg (rat)
Dermal	LD50	10,000 mg/kg (Rabbit)
Inhalative	LC50/4 h	>30 mg/l (Rat)

### 151-21-3 sodium dodecyl sulphate

Oral	LD50	1,288 mg/kg (rat)
Dermal	LD50	580 mg/kg (Rabbit)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant

## 12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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**Trade name: Precision Plus Protein Kaleidoscope Standards**

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**Additional ecological information:**
**General notes:**
*Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.*
*Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
**Results of PBT and vPvB assessment**
**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

### 13 Disposal considerations

**Waste treatment methods**
**Recommendation**
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
*Dispose of waste in accordance to applicable national, regional, or local regulations.*
**Uncleaned packagings:**
**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

**UN-Number**
**ADG, ADN, IMDG, IATA**

Not Reguated

**UN proper shipping name**
**ADG**

Not Reguated

Not Reguated

**ADN, IMDG, IATA**

Not Reguated

**Transport hazard class(es)**
**ADG, ADN, IMDG, IATA**
**Class**

Not Reguated

**Packing group**
**ADG, IMDG, IATA**

Not Reguated

**Environmental hazards:**
**Marine pollutant:**

No

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

**Transport/Additional information:**

Not dangerous according to the above specifications.

**UN "Model Regulation":**

Not Reguated

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Trade name: Precision Plus Protein Kaleidoscope Standards

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## 15 Regulatory information

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

#### · Australian Inventory of Chemical Substances

7732-18-5	water
56-81-5	glycerol
151-21-3	sodium dodecyl sulphate
77-86-1	Tris(hydroxymethyl)aminomethane
6381-92-6	Ethylenediaminetetraacetic acid disodium salt dihydrate
26628-22-8	sodium azide
115-39-9	tetrabromophenol blue

#### · Standard for the Uniform Scheduling of Medicines and Poisons

77-86-1	Tris(hydroxymethyl)aminomethane	S4
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#### · Australia: Priority Existing Chemicals

None of the ingredients is listed.

#### · Directive 2012/18/EU

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

#### · National regulations

#### · Technical instructions (air):

Class	Share in %
NK	20-35

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · Relevant phrases

H302 Harmful if swallowed.

H303 May be harmful if swallowed.

H311 Toxic in contact with skin.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H333 May be harmful if inhaled.

H335 May cause respiratory irritation.

· **Department issuing SDS:** Environmental Health and Safety.

#### · Contact:

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

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## Safety Data Sheet

### according to WHS Regulations

Printing date 29.08.2020

Revision: 25.07.2020

**Trade name: Precision Plus Protein Kaleidoscope Standards**

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**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity - oral – Category 4

Acute Tox. 5: Acute toxicity - oral – Category 5

Acute Tox. 3: Acute toxicity - dermal – Category 3

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Skin Corr. 3: Skin corrosion/irritation – Category 3

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

\* **Data compared to the previous version altered.**

## Safety Data Sheet according to WHS Regulations

Printing date 29.08.2020

Revision: 24.07.2020

Hazardous according to criteria of Safe Work Australia.

### 1 Identification

- **Product identifier**
- **Trade name:** Actin / Myosin Standard
- **Article number:** 1660010, 1660010EDU, 9703865
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories Pty. Ltd  
Level 5, 446 Victoria Road  
Gladesville NSW 2111  
Australia  
Tel 61-2-9914-2800 (1 800 224 354) Fax 61-2-9914-2888
- **Information department:** sales.australia@bio-rad.com
- **Emergency telephone number:** 61-2-9037-2994

### 2 Hazard(s) Identification

- **Classification of the substance or mixture**  
Acute Tox. 5 H303 May be harmful if swallowed.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.
- **Label elements**
- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labelling:**  
Dithiothreitol
- **Hazard statements**  
H303 May be harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P280 Wear protective gloves / eye protection / face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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## Safety Data Sheet

### according to WHS Regulations

Printing date 29.08.2020

Revision: 24.07.2020

Trade name: Actin / Myosin Standard

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- P312 Call a POISON CENTER/doctor if you feel unwell.  
 P321 Specific treatment (see on this label).  
 P362+P364 Take off contaminated clothing and wash it before reuse.  
 P332+P313 If skin irritation occurs: Get medical advice/attention.

• **Other hazards**

• **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.  
 • **vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

• **Chemical characterisation: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

• **Dangerous components:**

57-50-1	sucrose, pure		50-100%
3483-12-3	Dithiothreitol	Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	10-<20%

- **Additional information** For the wording of the listed hazard phrases refer to section 16.

### 4 First Aid Measures

• **Description of first aid measures**

- **General information** Immediately remove any clothing soiled by the product.  
 • **After inhalation** Supply fresh air; consult doctor in case of complaints.  
 • **After skin contact**  
 Generally the product does not irritate the skin.  
 Immediately wash with water and soap and rinse thoroughly.  
 Immediately rinse with water.  
 • **After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
 • **After swallowing** Rinse mouth with water. Seek medical attention and appropriate follow-up.  
 • **Information for doctor**  
 • **Most important symptoms and effects, both acute and delayed** No further relevant information available.  
 • **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

### 5 Fire Fighting Measures

- **Extinguishing media**  
 • **Suitable extinguishing agents** Use fire fighting measures that suit the environment.  
 • **Special hazards arising from the substance or mixture** No further relevant information available.  
 • **Advice for firefighters**  
 • **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.

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## Safety Data Sheet

### according to WHS Regulations

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Trade name: Actin / Myosin Standard

(Contd. of page 2)

- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**  
 No dangerous substances are released.  
 See Section 7 for information on safe handling  
 See Section 8 for information on personal protection equipment.  
 See Section 13 for disposal information.

## 7 Handling and Storage

- **Handling**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· <b>Components with limit values that require monitoring at the workplace:</b>
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57-50-1 sucrose, pure
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WES Long-term value: 10 mg/m <sup>3</sup>
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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes.  
 Avoid contact with the eyes and skin.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**  
 Safety glasses

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## Safety Data Sheet

according to WHS Regulations

Printing date 29.08.2020

Revision: 24.07.2020

**Trade name: Actin / Myosin Standard**

Tightly sealed goggles.

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### 9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Solid.
Colour:	White
Odour:	Odourless
Odour threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	1,500 °C

· **Flash point:** > 100 °C

· **Flammability (solid, gaseous)** Not determined.

· **Decomposition temperature:** Not determined.

· **Self igniting:** Product is not selfigniting.

· **Explosive properties:** Not determined.

· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

· **Vapour pressure:** Not applicable.

· **Density:** Not determined

· **Relative density** Not determined.

· **Vapour density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water: Soluble

· **Partition coefficient: n-octanol/water:** Not determined.

· **Viscosity:**

dynamic:	Not applicable.
kinematic:	Not applicable.

· **Solvent content:**

Solids content: 78.8 %

· **Other information** No further relevant information available.

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## Safety Data Sheet

### according to WHS Regulations

Printing date 29.08.2020

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Trade name: Actin / Myosin Standard

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### 10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

### 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

- **LD/LC50 values that are relevant for classification:**

3483-12-3 Dithiothreitol

Oral	LD50	400 mg/kg (rat)
------	------	-----------------

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

### 12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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## Safety Data Sheet

### according to WHS Regulations

Printing date 29.08.2020

Revision: 24.07.2020

Trade name: Actin / Myosin Standard

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### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.  
Dispose of waste in accordance to applicable national, regional, or local regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- |   |  |
|---|--|
| · <b>UN-Number</b>  |  |
| · <b>ADG, ADN, IMDG, IATA</b>   | Not Reguated   |
| · <b>UN proper shipping name</b>  |  |
| · <b>ADG</b>  | Not Reguated   |
|   | Not Reguated   |
| · <b>ADN, IMDG, IATA</b>  | Not Reguated   |
| · <b>Transport hazard class(es)</b>   |  |
| · <b>ADG, ADN, IMDG, IATA</b>   |  |
| · <b>Class</b>  | Not Reguated   |
| · <b>Packing group</b>  |  |
| · <b>ADG, IMDG, IATA</b>  | Not Reguated   |
| · <b>Environmental hazards:</b>   |  |
| · <b>Marine pollutant:</b>  | No   |
| · <b>Special precautions for user</b>                                       | Not applicable.                                      |
| · <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b> | Not applicable.                                      |
| · <b>Transport/Additional information:</b>                                  | Not dangerous according to the above specifications. |
| · <b>UN "Model Regulation":</b>   | Not Reguated   |

### 15 Regulatory information

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

#### · Australian Inventory of Chemical Substances

57-50-1	sucrose, pure
3483-12-3	Dithiothreitol
7447-40-7	potassium chloride
7791-18-6	magnesium chloride hexahydrate

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**Trade name: Actin / Myosin Standard**

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67-42-5 ethylenebis(oxyethylenenitrilo)tetra(acetic acid)

**Standard for the Uniform Scheduling of Medicines and Poisons**

7447-40-7 potassium chloride

S4

**Australia: Priority Existing Chemicals**

None of the ingredients is listed.

**Directive 2012/18/EU**
**Named dangerous substances - ANNEX I** None of the ingredients is listed.

**National regulations**
**Water hazard class:** Generally not hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Relevant phrases**

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

**Department issuing SDS:** Environmental Health and Safety.

**Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity - oral - Category 4

Acute Tox. 5: Acute toxicity - oral - Category 5

Skin Irrit. 2: Skin corrosion/irritation - Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation - Category 2A

STOT SE 3: Specific target organ toxicity (single exposure) - Category 3

**\* Data compared to the previous version altered.**



## Safety Data Sheet according to WHS Regulations

Printing date 29.08.2020

Revision: 30.07.2020

Hazardous according to criteria of Safe Work Australia.

### 1 Identification

- **Product identifier**
- **Trade name:** Dithiothreitol (DTT)
- **Article number:** 1610610, 1610611, 1610610EDU, 1610611EDU
- **CAS Number:**  
27565-41-9
- **EC number:**  
248-531-9
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories Pty. Ltd  
Level 5, 446 Victoria Road  
Gladesville NSW 2111  
Australia  
Tel 61-2-9914-2800 (1 800 224 354) Fax 61-2-9914-2888
- **Information department:** sales.australia@bio-rad.com
- **Emergency telephone number:** 61-2-9037-2994

### 2 Hazard(s) Identification

- **Classification of the substance or mixture**  
Acute Tox. 4 H302 Harmful if swallowed.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements** The substance is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labelling:**  
(R\*,R\*)-(±)-1,4-dimercaptobutane-2,3-diol
- **Hazard statements**  
H302 Harmful if swallowed.  
H315 Causes skin irritation.

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Trade name: Dithiothreitol (DTT)

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*H319 Causes serious eye irritation.**H335 May cause respiratory irritation.***Precautionary statements***P261 Avoid breathing dust/fume/gas/mist/vapours/spray.**P280 Wear protective gloves / eye protection / face protection.**P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.**P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

**Chemical characterisation: Substances****CAS No. Description:**

27565-41-9 (R\*,R\*)-(±)-1,4-dimercaptobutane-2,3-diol

**Identification number(s):****EC number:** 248-531-9**Additonal information:** For the wording of the listed risk phrases refer to section 16.

### 4 First Aid Measures

**Description of first aid measures****General information**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

**After inhalation** Supply fresh air; consult doctor in case of complaints.**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

**After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.**After swallowing**

Call for a doctor immediately.

Rinse mouth with water. Seek medical attention and appropriate follow-up.

**Information for doctor****Most important symptoms and effects, both acute and delayed**

Nausea

Disorientation

**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

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Trade name: Dithiothreitol (DTT)

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### 5 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents**  
Use fire fighting measures that suit the environment.  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and Storage

- **Handling**
- **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.

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## Safety Data Sheet

### according to WHS Regulations

Printing date 29.08.2020

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Trade name: Dithiothreitol (DTT)

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Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

• **Breathing equipment:**

Filter P1.

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

• **Protection of hands:** Protective gloves.

• **Material of gloves**

Recommended thickness of the material:  $\geq 0.11$  mm

Nitrile rubber, NBR

Synthetic gloves

• **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

• **For the permanent contact gloves made of the following materials are suitable:** Nitrile rubber, NBR

• **As protection from splashes gloves made of the following materials are suitable:** Nitrile rubber, NBR

• **Eye protection:**

Safety glasses

Tightly sealed goggles.

## 9 Physical and Chemical Properties

• **Information on basic physical and chemical properties**

• **General Information**

• **Appearance:**

Form: Solid.

Colour: Whitish

• **Odour:** Sulfurous

• **Odour threshold:** Not determined.

• **pH-value:** Not applicable.

• **Change in condition**

Melting point/freezing point: 42-44 °C

Initial boiling point and boiling range: undetermined

• **Flash point:** 110 °C

• **Flammability (solid, gaseous)** Product is not flammable.

• **Decomposition temperature:** Not determined.

• **Self igniting:** Not determined.

• **Explosive properties:** Product does not present an explosion hazard.  
Not determined.

• **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

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Trade name: Dithiothreitol (DTT)

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· <b>Vapour pressure:</b>	Not applicable.
· <b>Density:</b>	Not determined
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water at 25 °C:</b>	0.5 g/l
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
dynamic:	Not applicable.
kinematic:	Not applicable.
· <b>Solids content:</b>	100.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

## 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values that are relevant for classification:**

**27565-41-9 (R\*,R\*)-(±)-1,4-dimercaptobutane-2,3-diol**

Oral LD50 400 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

## 12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.

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## Safety Data Sheet

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Trade name: Dithiothreitol (DTT)

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- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation** Dispose of waste in accordance to applicable national, regional, or local regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- |  |                 |
|--|-----------------|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>ADG, ADN, IMDG, IATA</b></li> </ul>  | Not Reguated    |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>ADG, ADN, IMDG, IATA</b></li> </ul>                            | Not Reguated    |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>ADG, ADN, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul> | Not Reguated    |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>   | Not Reguated    |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>  | Not applicable. |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>  | Not applicable. |
| <ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>                        | Not applicable. |
| <ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>  | Not Reguated    |

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## Safety Data Sheet according to WHS Regulations

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Trade name: Dithiothreitol (DTT)

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### 15 Regulatory information

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

· **Australian Inventory of Chemical Substances**

Substance is not listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

Substance is not listed.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **National regulations**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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