

# KIT SAFETY DATA SHEET



Kit Product Name FLICA 660 CASPASE-3/7 KIT

Kit Catalogue Number(s) Not applicable

Revision date 14-Mar-2022

## Kit Contents

Catalogue Number(s)	Product Name
	10X APOPTOSIS WASH BUFFER - #10471
	FIXATIVE - #10498
	655 FLUORESCENCE LABELED DERIVATIVE OF ASPARTYLGLUTAMYLVALYLASPARTIC ACID FLUOROMETHYL KETONE - #20375



# SAFETY DATA SHEET

Revision date 17-Nov-2021

Revision Number 2

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

### Product identifier

Product Name 10X APOPTOSIS WASH BUFFER - #10471

### Other means of identification

Safety data sheet number 10471

### Recommended use of the chemical and restrictions on use

Recommended use For research use only

Uses advised against No information available

### Details of the supplier of the safety data sheet

#### Corporate Headquarters

Bio-Rad Laboratories Inc.  
1000 Alfred Nobel Drive  
Hercules, CA 94547  
USA

#### Manufacturer

Bio-Rad  
Endeavour House  
Langford Business Park  
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antibody\_safetydatasheets@bio-rad.com

#### Legal Entity / Contact Address

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189 Bush Road  
Albany Auckland  
New Zealand

Technical Service +64 9 415 2280 or 0508 805 500  
sales.nz@bio-rad.com

### Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC New Zealand: 64-98010034

## SECTION 2: Hazards identification

### GHS Classification

Not classified

### Label elements

### Hazard statements

### Other hazards which do not result in classification

Contains animal source material (Cattle)

## SECTION 3: Composition/information on ingredients

Chemical name	CAS No	Weight-%
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Chemical name	CAS No	Weight-%
Sodium azide	26628-22-8	0.1 - 0.299
Non-hazardous ingredients	Proprietary	Balance

## SECTION 4: First aid measures

### Description of first aid measures

General advice	No hazards which require special first aid measures.
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Skin contact	Wash skin with soap and water.
Ingestion	Rinse mouth thoroughly with water.

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

Symptoms	No information available.
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### Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.
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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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Unsuitable extinguishing media	No information available.
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### Specific hazards arising from the chemical

Specific hazards arising from the chemical	None known.
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### Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal precautions	See section 8 for more information.
For emergency responders	Use personal protection recommended in Section 8.

### Environmental precautions

**Environmental precautions** See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labelled containers.

**Precautions to prevent secondary hazards**

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## SECTION 7: Handling and storage

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Store according to product and label instructions.

**Incompatible materials** Metals.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

**Exposure Limits**

Chemical name	New Zealand	ACGIH TLV	United Kingdom	Australia
Sodium azide 26628-22-8	Ceiling: 0.11 ppm Ceiling: 0.29 mg/m <sup>3</sup>	Ceiling: 0.29 mg/m <sup>3</sup> Sodium azide Ceiling: 0.11 ppm Hydrazoic acid vapor	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup> Sk*	0.11 ppm Peak 0.3 mg/m <sup>3</sup> Peak

**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

**Appropriate engineering controls**

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Hand protection** Wear suitable gloves.

**Skin and body protection** Wear suitable protective clothing.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Environmental exposure controls** No information available.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Clear to semi-clear
<b>Colour</b>	Varies
<b>Odour</b>	No information available.
<b>Odour threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>		None known
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point / boiling range</b>	No data available	None known
<b>Flash point</b>	No data available	None known
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapour pressure</b>	No data available	None known
<b>Vapour density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water solubility</b>	Soluble in water	
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b>Explosive properties</b>	Not applicable.	
<b>Oxidising properties</b>	Not applicable.	
<u>Other information</u>		
<b>Molecular weight</b>	Not applicable	
<b>VOC Content (%)</b>	Not applicable	

## SECTION 10: Stability and reactivity

### Reactivity

**Reactivity** No information available.

### Chemical stability

**Stability** Stable under normal conditions.

### Explosion data

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

### Possibility of hazardous reactions

**Possibility of hazardous reactions** Avoid contact with metals. This product contains Sodium azide. Sodium azide can react with Copper, Brass, Lead, and solder in piping systems to form explosive compounds and toxic gases.

**Conditions to avoid**

**Conditions to avoid** None known based on information supplied.

**Incompatible materials**

**Incompatible materials** Metals.

**Hazardous decomposition products**

**Hazardous decomposition products** None known based on information supplied.

## SECTION 11: Toxicological information

**Acute toxicity****Information on likely routes of exposure****Product Information**

**Inhalation** Specific test data for the substance or mixture is not available.

**Eye contact** Specific test data for the substance or mixture is not available.

**Skin contact** Specific test data for the substance or mixture is not available.

**Ingestion** Specific test data for the substance or mixture is not available.

**Symptoms** No information available.

**Acute toxicity****Numerical measures of toxicity**

**Oral LD50** No information available  
**Dermal LD50** No information available  
**Inhalation LC50** No information available

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium azide	= 27 mg/kg ( Rat )	= 20 mg/kg ( Rabbit )	0.054 - 0.52 mg/L ( Rat ) 4 h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT - single exposure** Based on available data, the classification criteria are not met.  
**Respiratory irritation** Based on available data, the classification criteria are not met.  
**Narcotic effects** Based on available data, the classification criteria are not met.

**STOT - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**SECTION 12: Ecological information****Ecotoxicity****Ecotoxicity****Aquatic ecotoxicity****Unknown aquatic toxicity**

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Sodium azide	-	LC50: =0.7mg/L (96h, <i>Lepomis macrochirus</i> ) LC50: =0.8mg/L (96h, <i>Oncorhynchus mykiss</i> ) LC50: =5.46mg/L (96h, <i>Pimephales promelas</i> )	-

**Terrestrial ecotoxicity**

There is no data for this product.

**Persistence and degradability**

No information available.

**Bioaccumulative potential****Bioaccumulation**

No information available.

**Mobility in soil****Other adverse effects**

No information available.

**SECTION 13: Disposal considerations****Waste treatment methods****Contaminated packaging**

For packages that have been in direct contact with hazardous substances, the person must ensure that the package is rendered incapable of containing any substance. It must be disposed of in a manner that is consistent with the requirements for disposal of the substance that it contained, taking into account the material the package is manufactured from

Packages may only be reused or recycled if the package has been treated to remove any residual contents of the hazardous substance (class 1, 2, 3, 4, or 5); or the contents of the residue in the package are below the threshold for the substance to be classified as hazardous (class 6, 8, or 9 substance)

**SECTION 14: Transport information****IATA**

Not regulated

**IMDG**

Not regulated

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

No information available

**SECTION 15: Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****New Zealand**

Chemical name	New Zealand HSNO Chemical Classification
Sodium azide - 26628-22-8	6.1B (All),6.1B (O),9.1B (All),9.1B (F),9.1B (C),9.1B (A),9.3B 6.1B (All),6.1B (O),9.1A (All),9.1A (F),9.1A (C),9.1A (A),9.3A 6.1B (All),6.1B (O),9.1C (All),9.1C (F),9.1C (C),9.1C (A),9.3C

**National regulations**

See Section 8 for any applicable tolerable exposure limits and environmental exposure limits

**Certified handlers, tracking and controlled substance license requirements**

Certified handlers are required for some substances. This includes for substances requiring a controlled substance license, including Class 1 explosives, vertebrate toxic agents (9.3A, B, C), and certain fumigants. Class 6.1A and 6.1B substances such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information

Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information

Controlled substance licenses are required to possess certain class 1 (explosive) and class 6 (vertebrate toxic agents or fumigants) substances. See Part 7 of the Health and Safety at Work Regulation 2017 for more information

**EPA New Zealand HSNO approval code or group standard**

Not applicable

**International Inventories**

Contact supplier for inventory compliance status

**Legend:****International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**SECTION 16: Other information****Prepared By**

Bio-Rad Laboratories, Environmental Health and Safety

**Revision date**

17-Nov-2021

**Revision Note**

Significant changes throughout SDS. Review all sections.

**Key or legend to abbreviations and acronyms used in the safety data sheet****Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database



European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
RTECS (Registry of Toxic Effects of Chemical Substances)  
World Health Organization

**Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text**

**End of Safety Data Sheet**



# SAFETY DATA SHEET

Revision date 17-Nov-2021

Revision Number 1

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

### Product identifier

Product Name FIXATIVE - #10498

### Other means of identification

Safety data sheet number 10498

### Recommended use of the chemical and restrictions on use

Recommended use For research use only

Uses advised against No information available

### Details of the supplier of the safety data sheet

#### Corporate Headquarters

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#### Manufacturer

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### Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC New Zealand: 64-98010034

## SECTION 2: Hazards identification

### GHS Classification

Acute toxicity - Oral	Category 4 (HSNO - 6.1D)
Acute toxicity - Dermal	Category 4 (HSNO - 6.1D)
Acute toxicity - Inhalation (Gases)	Category 4 (HSNO - 6.1D)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 (HSNO - 6.1D)
Skin corrosion/irritation	Category 1 Sub-category B (HSNO - 8.2B)
Serious eye damage/eye irritation	Category 1 (HSNO - 8.3A)
Skin sensitisation	Category 1 (HSNO - 6.5B)
Germ cell mutagenicity	Category 2 (HSNO - 6.6B)
Carcinogenicity	Category 1B (HSNO - 6.7A)
Specific target organ toxicity — single exposure	Category 1 Category 3 (HSNO - 6.1E)
Acute aquatic toxicity	Category 3 (HSNO - 9.1D)

### Label elements

**Signal word**

Danger

**Hazard statements**

H302 - Harmful if swallowed  
H312 - Harmful in contact with skin  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H332 - Harmful if inhaled  
H335 - May cause respiratory irritation  
H341 - Suspected of causing genetic defects  
H350 - May cause cancer  
H370 - Causes damage to organs  
H402 - Harmful to aquatic life

**Precautionary Statements - Prevention**

Wear protective gloves/protective clothing/eye protection/face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area  
Do not breathe dust/fume/gas/mist/vapours/spray  
Contaminated work clothing should not be allowed out of the workplace  
Avoid release to the environment

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
Immediately call a POISON CENTRE or doctor  
IF exposed or concerned: Call a POISON CENTER or doctor

**Eyes**

Immediately call a POISON CENTRE or doctor  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Skin**

IF ON SKIN: Wash with plenty of water and soap  
Call a POISON CENTRE or doctor if you feel unwell  
Take off all contaminated clothing and wash it before reuse  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]  
Wash contaminated clothing before reuse  
If skin irritation or rash occurs: Get medical advice/attention

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Call a POISON CENTRE or doctor if you feel unwell  
Immediately call a POISON CENTRE or doctor

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
Rinse mouth  
IF SWALLOWED: rinse mouth. Do NOT induce vomiting

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification**SECTION 3: Composition/information on ingredients**

Chemical name	CAS No	Weight-%
Formaldehyde	50-00-0	10 - 20
Methanol	67-56-1	2.5 - 5
Non-hazardous ingredients	Proprietary	Balance

**SECTION 4: First aid measures**Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.
<b>Ingestion</b>	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapours or mists. Use personal protective equipment as required. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Burning sensation. Itching. Rashes. Hives. Coughing and/ or wheezing. Difficulty in breathing.
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Indication of any immediate medical attention and special treatment needed

<b>Note to doctors</b>	Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitisation in susceptible persons. Treat symptomatically.
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**SECTION 5: Firefighting measures**Suitable Extinguishing Media

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media** No information available.

#### **Specific hazards arising from the chemical**

**Specific hazards arising from the chemical** The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours. Product is or contains a sensitiser. May cause sensitisation by skin contact.

#### **Special protective actions for fire-fighters**

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

### **SECTION 6: Accidental release measures**

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

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapours or mists.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

#### **Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

#### **Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labelled containers.

#### **Precautions to prevent secondary hazards**

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### **SECTION 7: Handling and storage**

#### **Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Remove contaminated clothing and shoes. Avoid breathing vapours or mists.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Protect from moisture. Store away from other materials. Store according to product and label instructions.

**Incompatible materials** Acids. Bases. Oxidising agent.

**SECTION 8: Exposure controls/personal protection****Control parameters****Exposure Limits**

Chemical name	New Zealand	ACGIH TLV	United Kingdom	Australia
Formaldehyde 50-00-0	TWA: 0.3 ppm STEL: 0.6 ppm	dermal sensitizer;respiratory sensitizer STEL: 0.3 ppm TWA: 0.1 ppm	TWA: 2 ppm TWA: 2.5 mg/m <sup>3</sup> STEL: 2 ppm STEL: 2.5 mg/m <sup>3</sup>	1 ppm 1.2 mg/m <sup>3</sup> 2 ppm STEL 2.5 mg/m <sup>3</sup> STEL
Methanol 67-56-1	TWA: 200 ppm TWA: 262 mg/m <sup>3</sup> STEL: 250 ppm STEL: 328 mg/m <sup>3</sup> Skin	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 266 mg/m <sup>3</sup> STEL: 250 ppm STEL: 333 mg/m <sup>3</sup> Sk*	200 ppm 262 mg/m <sup>3</sup> 250 ppm STEL 328 mg/m <sup>3</sup> STEL

**Biological occupational exposure limits**

Chemical name	New Zealand	ACGIH
Methanol 67-56-1	15 mg/L - urine (Methyl alcohol) - end of shift	15 mg/L - urine (Methanol) - end of shift

**Appropriate engineering controls**

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Tight sealing safety goggles. Face protection shield.

**Hand protection** Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Environmental exposure controls** No information available.

**SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties**

**Physical state** Liquid  
**Appearance** Clear to semi-clear

Colour	Varies
Odour	No information available.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	Not applicable.	
Oxidising properties	Not applicable.	
<u>Other information</u>		
Molecular weight	Not applicable	
VOC Content (%)	Not applicable	

## SECTION 10: Stability and reactivity

### Reactivity

Reactivity	No information available.
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### Chemical stability

Stability	Stable under normal conditions.
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### Explosion data

Sensitivity to mechanical impact	None.
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Sensitivity to static discharge	None.
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### Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.
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### Conditions to avoid

Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat.
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### Incompatible materials

Incompatible materials	Acids. Bases. Oxidising agent.
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### Hazardous decomposition products

**Hazardous decomposition products** None known based on information supplied.

## SECTION 11: Toxicological information

### Acute toxicity

#### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause irritation of respiratory tract. Harmful by inhalation.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May cause sensitisation by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May be absorbed through the skin in harmful amounts. Harmful in contact with skin.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.
<b>Symptoms</b>	Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

### Acute toxicity

#### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	714.30 mg/kg
ATEmix (dermal)	1,985.29 mg/kg
ATEmix (inhalation-gas)	7,000.00 mg/l
ATEmix (inhalation-vapour)	1,042.40 mg/l
ATEmix (inhalation-dust/mist)	3.58 mg/l

Oral LD50	No information available
Dermal LD50	No information available
Inhalation LC50	No information available
Inhalation LC50	No information available

#### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Formaldehyde	= 100 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	< 463 ppm ( Rat ) 4 h
Methanol	= 6200 mg/kg ( Rat )	= 15840 mg/kg ( Rabbit )	= 22500 ppm ( Rat ) 8 h

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes burns.
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<b>Serious eye damage/eye irritation</b>	Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.
<b>Respiratory or skin sensitisation</b>	May cause sensitisation by skin contact
<b>Germ cell mutagenicity</b>	Contains a known or suspected mutagen. Classification based on data available for ingredients. Suspected of causing genetic defects.
<b>Carcinogenicity</b>	Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	New Zealand	IARC
Formaldehyde - 50-00-0	Confirmed carcinogen	Group 1

#### Legend

**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>STOT - single exposure</b>	Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs in contact with skin. Causes damage to organs if inhaled. May cause respiratory irritation. Classification based on data available for ingredients.
<b>Respiratory irritation</b>	Irritant.
<b>Narcotic effects</b>	Based on available data, the classification criteria are not met.
<b>STOT - repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### Ecotoxicity

**Ecotoxicity** Harmful to aquatic life.

### Aquatic ecotoxicity

**Unknown aquatic toxicity** 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Formaldehyde	-	LC50: 0.032 - 0.226mL/L (96h, Oncorhynchus mykiss) LC50: 100 - 136mg/L (96h, Oncorhynchus mykiss) LC50: 22.6 - 25.7mg/L (96h, Pimephales promelas) LC50: 23.2 - 29.7mg/L (96h, Pimephales promelas) LC50: =1510µg/L (96h, Lepomis macrochirus) LC50: =41mg/L (96h, Brachydanio rerio)	EC50: 11.3 - 18mg/L (48h, Daphnia magna) LC50: =2mg/L (48h, Daphnia magna)
Methanol	-	LC50: 13500 - 17600mg/L (96h, Lepomis macrochirus) LC50: 18 - 20mL/L (96h, Oncorhynchus mykiss) LC50: 19500 - 20700mg/L (96h, Oncorhynchus mykiss) LC50: =28200mg/L (96h,	-

		Pimephales promelas LC50: >100mg/L (96h, Pimephales promelas)	
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**Terrestrial ecotoxicity**

Chemical name	Earthworm	Avian	Honeybees
Methanol	Acute Toxicity: LC50 > 1 mg/cm <sup>2</sup> (Eisenia foetida, 48 h filter paper)	-	-

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** There is no data for this product.

Chemical name	Partition coefficient
Formaldehyde	0.35
Methanol	-0.77

**Mobility in soil****Other adverse effects**

No information available.

**SECTION 13: Disposal considerations****Waste treatment methods****Contaminated packaging**

For packages that have been in direct contact with hazardous substances, the person must ensure that the package is rendered incapable of containing any substance. It must be disposed of in a manner that is consistent with the requirements for disposal of the substance that it contained, taking into account the material the package is manufactured from

Packages may only be reused or recycled if the package has been treated to remove any residual contents of the hazardous substance (class 1, 2, 3, 4, or 5); or the contents of the residue in the package are below the threshold for the substance to be classified as hazardous (class 6, 8, or 9 substance)

**SECTION 14: Transport information**

**IATA** Not regulated

**IMDG** Not regulated

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

No information available

**SECTION 15: Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations**

New Zealand

Chemical name	New Zealand HSNO Chemical Classification
Formaldehyde - 50-00-0	3.1C,6.1B (All),6.1B (I),6.1C (O),6.1C (D),6.5B,6.6B,6.7A,6.9B (All),6.9B (O),6.9B (I),8.2C,8.3A,9.1D (All),9.1D (F),9.1D (C),9.2A,9.3B 6.1D (All),6.1D (O),6.1D (D),6.1D (I),6.3A,6.4A,6.5B,6.6B,6.7A,6.9A (All),6.9A (O),6.9B (I),9.1D (All),9.1D (F),9.1D (C),9.2B,9.3C 3.1D,6.1B (All),6.1B (I),6.1C (O),6.1C (D),6.5B,6.6B,6.7A,6.9B (All),6.9B (O),6.9B (I),8.2C,8.3A,9.1D (All),9.1D (F),9.1D (C),9.2A,9.3B 6.1E (All),6.3A,6.4A,6.5B,6.6B,6.7A,6.9B (All),9.2B 6.3A,6.4A,6.5B,9.2B
Methanol - 67-56-1	3.1B,6.1C (All),6.1C (O),6.1C (D),6.1C (I),6.4A,6.8B,6.9A (All),6.9A (I),9.3C 3.1C,6.1C (All),6.1C (O),6.1C (D),6.4A,6.8B,6.9A (All),6.9A (Oth),9.3C 6.1E (All),6.1E (O),6.1E (D),6.8B,6.9B (All),6.9B (I) 3.1C,6.1C (All),6.1C (O),6.1C (D),6.1C (I),6.4A,6.8B,6.9A (All),6.9A (I),9.3C 3.1C,6.1D (All),6.1D (O),6.1D (D),6.1D (I),6.4A,6.8B,6.9A (All),6.9A (I)

**National regulations**

See Section 8 for any applicable tolerable exposure limits and environmental exposure limits

**Certified handlers, tracking and controlled substance license requirements**

Certified handlers are required for some substances. This includes for substances requiring a controlled substance license, including Class 1 explosives, vertebrate toxic agents (9.3A, B, C), and certain fumigants. Class 6.1A and 6.1B substances such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information

Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information

Controlled substance licenses are required to possess certain class 1 (explosive) and class 6 (vertebrate toxic agents or fumigants) substances. See Part 7 of the Health and Safety at Work Regulation 2017 for more information

**EPA New Zealand HSNO approval code or group standard**

Not applicable

**International Inventories**

Contact supplier for inventory compliance status

**Legend:****International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**SECTION 16: Other information****Prepared By**

Bio-Rad Laboratories, Environmental Health and Safety

**Revision date**

17-Nov-2021

**Revision Note**

Significant changes throughout SDS. Review all sections.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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TWA Ceiling C	TWA (time-weighted average) Maximum limit value Carcinogen	STEL *	STEL (Short Term Exposure Limit) Skin designation
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**Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
RTECS (Registry of Toxic Effects of Chemical Substances)  
World Health Organization

**Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text**

**End of Safety Data Sheet**



# SAFETY DATA SHEET

Revision date 14-Mar-2022

Revision Number 2

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

### Product identifier

**Product Name** 655 FLUORESCENCE LABELED DERIVATIVE OF  
ASPARTYLGLUTAMYLVALYLASPARTIC ACID FLUOROMETHYL KETONE - #20375

### Other means of identification

**Safety data sheet number** 20375

### Recommended use of the chemical and restrictions on use

**Recommended use** For research use only

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

#### Corporate Headquarters

Bio-Rad Laboratories Inc.  
1000 Alfred Nobel Drive  
Hercules, CA 94547  
USA

#### Manufacturer

Bio-Rad  
Endeavour House  
Langford Business Park  
Kidlington  
Oxford  
OX5 1GE  
United Kingdom  
e-mail:  
antibody\_safetydatasheets@bio-rad.com

#### Legal Entity / Contact Address

Bio-Rad Laboratories Pty Ltd  
189 Bush Road  
Albany Auckland  
New Zealand

**Technical Service** +64 9 415 2280 or 0508 805 500  
sales.nz@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC New Zealand: 64-98010034

## SECTION 2: Hazards identification

### GHS Classification

Not classified

### Label elements

**Hazard statements**

**Other hazards which do not result in classification**

## SECTION 3: Composition/information on ingredients

Chemical name	CAS No	Weight-%
Trade secret	-	50 - 100

## SECTION 4: First aid measures

### Description of first aid measures

General advice	No hazards which require special first aid measures.
Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Skin contact	Wash skin with soap and water.
Ingestion	Rinse mouth thoroughly with water.

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

Symptoms	No information available.
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### Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.
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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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Unsuitable extinguishing media	No information available.
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### Specific hazards arising from the chemical

Specific hazards arising from the chemical	None known.
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### Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal precautions	See section 8 for more information.
For emergency responders	Use personal protection recommended in Section 8.

#### Environmental precautions

**Environmental precautions** See Section 12 for additional Ecological Information.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labelled containers.

#### Precautions to prevent secondary hazards

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### **SECTION 7: Handling and storage**

#### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice.

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

**Storage Conditions** Store according to product and label instructions.

**Incompatible materials** None known based on information supplied.

### **SECTION 8: Exposure controls/personal protection**

#### Control parameters

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

#### Appropriate engineering controls

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

#### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Hand protection** Wear suitable gloves.

**Skin and body protection** Wear suitable protective clothing.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls No information available.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Physical state	Powder
Appearance	Powder
Colour	Varies
Odour	No information available.
Odour threshold	No information available

Property	Values	Remarks • Method
pH		None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	Not applicable.	
Oxidising properties	Not applicable.	
<b>Other information</b>		
Molecular weight	Not applicable	
VOC Content (%)	Not applicable	

## SECTION 10: Stability and reactivity

### Reactivity

Reactivity No information available.

### Chemical stability

Stability Stable under normal conditions.

### Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

### Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.



**Conditions to avoid**

**Conditions to avoid** None known based on information supplied.

**Incompatible materials**

**Incompatible materials** None known based on information supplied.

**Hazardous decomposition products**

**Hazardous decomposition products** None known based on information supplied.

**SECTION 11: Toxicological information**

**Acute toxicity**

**Information on likely routes of exposure**

**Product Information**

**Inhalation** Specific test data for the substance or mixture is not available.

**Eye contact** Specific test data for the substance or mixture is not available.

**Skin contact** Specific test data for the substance or mixture is not available.

**Ingestion** Specific test data for the substance or mixture is not available.

**Symptoms** No information available.

**Acute toxicity**

**Numerical measures of toxicity**

No information available

**Oral LD50** No information available

**Dermal LD50** No information available

**Inhalation LC50** No information available

**Inhalation LC50** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT - single exposure** Based on available data, the classification criteria are not met.

**Respiratory irritation** Based on available data, the classification criteria are not met.

**Narcotic effects** Based on available data, the classification criteria are not met.

**STOT - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

### Ecotoxicity

**Ecotoxicity** The environmental impact of this product has not been fully investigated.

### **Aquatic ecotoxicity**

**Terrestrial ecotoxicity** There is no data for this product.

**Persistence and degradability** No information available.

### Bioaccumulative potential

**Bioaccumulation** No information available.

### Mobility in soil

### Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### Waste treatment methods

**Contaminated packaging** For packages that have been in direct contact with hazardous substances, the person must ensure that the package is rendered incapable of containing any substance. It must be disposed of in a manner that is consistent with the requirements for disposal of the substance that it contained, taking into account the material the package is manufactured from  
Packages may only be reused or recycled if the package has been treated to remove any residual contents of the hazardous substance (class 1, 2, 3, 4, or 5); or the contents of the residue in the package are below the threshold for the substance to be classified as hazardous (class 6, 8, or 9 substance)

## SECTION 14: Transport information

**IATA** Not regulated

**IMDG** Not regulated

**Transport in bulk according to Annex II of MARPOL and the IBC Code**  
No information available

## SECTION 15: Regulatory information

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

### National regulations

## New Zealand

<b>National regulations</b>	See Section 8 for any applicable tolerable exposure limits and environmental exposure limits
<b>Certified handlers, tracking and controlled substance license requirements</b>	<p>Certified handlers are required for some substances. This includes for substances requiring a controlled substance license, including Class 1 explosives, vertebrate toxic agents (9.3A, B, C), and certain fumigants. Class 6.1A and 6.1B substances such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information</p> <p>Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information</p> <p>Controlled substance licenses are required to possess certain class 1 (explosive) and class 6 (vertebrate toxic agents or fumigants) substances. See Part 7 of the Health and Safety at Work Regulation 2017 for more information</p>
<b>EPA New Zealand HSNO approval code or group standard</b>	Not applicable

### International Inventories

Contact supplier for inventory compliance status

### Legend:

### International Regulations

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

## SECTION 16: Other information

**Prepared By** Bio-Rad Laboratories, Environmental Health and Safety

**Revision date** 14-Mar-2022

**Revision Note** Significant changes throughout SDS. Review all sections.

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

### **Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGLS)  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
RTECS (Registry of Toxic Effects of Chemical Substances)  
World Health Organization

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**End of Safety Data Sheet**