

# KIT SAFETY DATA SHEET



**Kit Product Name** DCode Electrophoresis Reagent Kit DGGE/CDGE  
**Kit Catalogue Number(s)** 1709170  
**Revision date** 24-Jan-2023

## Kit Contents

Catalogue Number(s)	Product Name
1610745, 1610730, 1610731, 1610730EDU, 1610731EDU, 9703450	Urea
9700106, 1610800, 1610800EDU, 1610801, 1610801EDU, 1610802, 9701410, 10041484, 10004374	TEMED
1610700, 1610754, 1610702, 1610700EDU	Ammonium Persulfate
1610433, 1610433EDU	Ethidium Bromide Solution 10 mg/ml
9702653	Formamide (Deionized)
1610148, 1610149, 1610148EDU, 1610149EDU	40% Acrylamide/Bis Solution, 37.5:1
1610743, 1610773, 1660742, 1610773EDU, 1610743EDU, 1660742EDU, 9703685	50X Tris/Acetic Acid/EDTA Buffer
9702681	DCode 2X Gel Loading Dye
9702660	DCode Dye Solution



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** Urea  
**Revision date** 24-Aug-2022  
**Revision Number** 3.1

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

### Product identifier

**Product Name** Urea  
**Catalogue Number(s)** 1610745, 1610730, 1610731, 1610730EDU, 1610731EDU, 9703450  
**English chemical name** Urea

### Other means of identification

**CAS No** 57-13-6  
**Pure substance/mixture** Substance

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

No significant adverse health effects

**Appearance** powder or cake, lyophilised      **Physical state** Solid      **Odour** Ammonia-like odour

### Classification of the substance or mixture

Not classified

### Label elements

#### **Hazard statements**

Not classified

**Physical and chemical hazards**

Not applicable.

**Health hazards**

Immediate Health Effects: Not applicable.

Chronic effects: Not applicable.

**Environmental hazards**

Not applicable

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance****CAS No** 57-13-6

Not classified.

Chemical name	Weight-%	CAS No
Urea	50 - 100	57-13-6

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

<b>General advice</b>	No hazards which require special first aid measures.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash skin with soap and water.
<b>Ingestion</b>	Rinse mouth thoroughly with water.
<b><u>Most important symptoms and effects, both acute and delayed</u></b>	No information available.
<b><u>For emergency responders</u></b>	No information available.
<b><u>Note to doctors</u></b>	Treat symptomatically.

**SECTION 5: Firefighting measures****Extinguishing media**

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

**Special protective actions 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**

See section 8 for more information.

**For emergency responders**

Use personal protection recommended in Section 8.

**Environmental precautions**

See Section 12 for additional Ecological Information.

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

Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.

**Precautions to prevent secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations.

**SECTION 7: Handling and storage****Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. See Section 8 for information on appropriate personal protective equipment.

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

Store according to product and label instructions.

**Incompatible materials**

None known based on information supplied.

**SECTION 8: Exposure controls/personal protection****Occupational exposure limits**

Chemical name	China	ACGIH TLV
Urea - 57-13-6	TWA: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup>	No data available

**Note**

See section 16 for terms and abbreviations

**Biological occupational exposure limits**

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

**Monitoring and observation processes**

No applicable information was found.

**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).

**Skin and body protection**

Wear suitable protective clothing.

<b>Hand protection</b>	Wear suitable gloves.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	powder or cake, lyophilised
<b>Colour</b>	white
<b>Physical state</b>	Solid
<b>Odour</b>	Ammonia-like odour
<b>Odour threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	9.1	
<b>Melting point / freezing point</b>	135 °C	
<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>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Additional information

<b>Explosive properties</b>	Not applicable
<b>Oxidising properties</b>	Not applicable

## SECTION 10: Stability and reactivity

<b>Stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Conditions to avoid</b>	None known based on information supplied.
<b>Incompatible materials</b>	None known based on information supplied.
<b>Hazardous decomposition products</b>	None known based on information supplied.

## SECTION 11: Toxicological information

### Acute toxicity

**Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Urea	= 8471 mg/kg ( Rat )	-	-

**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.

**Respiratory or skin sensitisation** 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.

**Specific target organ toxicity — single exposure** Based on available data, the classification criteria are not met.

**Specific target organ toxicity — 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**

Chemical name	Algae/aquatic plants	Fish	Crustacea
Urea	-	LC50: 16200 - 18300mg/L (96h, Poecilia reticulata)	EC50: =3910mg/L (48h, Daphnia magna)

**Persistence and degradability** No information available.

**Bioaccumulative potential** There is no data for this product.

**Component Information**

Chemical name	Partition coefficient
Urea	-1.73

**Mobility in soil** No information available.

**SECTION 13: Disposal considerations**

**Waste chemicals** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**SECTION 14: Transport information**

**IMDG** Not regulated  
**Transport in bulk according to** No information available  
**Annex II of MARPOL and the IBC**  
**Code**

**IATA** Not regulated

**China** Not regulated

**Special precautions for user**

Please refer to the applicable dangerous goods regulations for additional information

## SECTION 15: Regulatory information

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

#### National regulations

##### **Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors: Not applicable.  
 Catalogue of occupational diseases: Not applicable.

##### **Regulations on the Control over Safety of Hazardous Chemicals**

Inventory of hazardous chemicals Not applicable.

GB 18218-2009 Identification of major hazard installations for dangerous chemicals Not applicable

**List of hazardous chemicals under priority management** Not applicable

##### **Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used**

Inventory of highly toxic goods Not applicable

##### **Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

List of toxic chemicals severely restricted for import and export in China Not applicable

##### **Measures for the Environmental Management of New Chemical Substances**

**IECSC - China Inventory of Existing Chemical Substances** Contact supplier for inventory compliance status.

#### 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** 24-Aug-2022

**Revision Note** Reformatted and updated existing information.

#### **Abbreviations and acronyms**

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

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** TEMED  
**Revision date** 08-Nov-2022  
**Revision Number** 1.1

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

### Product identifier

**Product Name** TEMED

**Catalogue Number(s)** 9700106, 1610800, 1610800EDU, 1610801, 1610801EDU, 1610802, 9701410, 10041484, 10004374

**English chemical name** 1,2-Bis(dimethylamino)ethane

### Other means of identification

**UN/ID no** UN2372

**CAS No** 110-18-9

**Pure substance/mixture** Substance

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

CORROSIVE - CAUSES IRREVERSIBLE EYE (AND SKIN) DAMAGE  
Risk of serious damage to eyes  
HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames

**Appearance** Liquid **Physical state** Liquid **Odour** Amine

### Classification of the substance or mixture

<b>Flammable liquids</b>	Category 2
<b>Acute toxicity - Oral</b>	Category 4

Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

**Label elements****Signal word**

Danger

**Hazard statements**

Highly flammable liquid and vapour  
Harmful if swallowed  
Harmful in contact with skin  
Harmful if inhaled  
Causes severe skin burns and eye damage

**Precautionary statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing/eye protection/face protection  
Use only outdoors or in a well-ventilated area  
Do not breathe dust/fume/gas/mist/vapours/spray  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Use only non-sparking tools  
Take precautionary measures against static discharge

**Response**

Immediately call a POISON CENTRE or doctor  
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  
Call a POISON CENTRE or doctor if you feel unwell  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
Wash contaminated clothing before reuse  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Immediately call a POISON CENTRE or doctor  
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
Rinse mouth  
Do NOT induce vomiting  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

**Storage**

Store in a well-ventilated place. Keep cool

**Disposal**

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

**Physical and chemical hazards**

Highly flammable liquid and vapour. Will be easily ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated.

**Health hazards**

Immediate Health Effects: Harmful. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Contact may cause burns to skin and eyes. Risk of serious damage to eyes. Impairment of vision.  
Chronic effects: Not applicable.

**Environmental hazards**

Not applicable

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance**

CAS No 110-18-9

Chemical name	Weight-%	CAS No
1,2-Bis(dimethylamino)ethane	50 - 100	110-18-9

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

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<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.
<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><u>Most important symptoms and effects, both acute and delayed</u></b>	Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.
<b><u>For emergency responders</u></b>	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. 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.
<b><u>Note to doctors</u></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.

**SECTION 5: Firefighting measures****Extinguishing media**

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

<b>Unsuitable extinguishing media</b>	No information available.
<b><u>Specific hazards arising from the chemical</u></b>	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.
<b><u>Special protective actions for fire-fighters</u></b>	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

<b>Personal precautions</b>	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Attention! Corrosive material. Avoid breathing vapours or mists.
<b>Other information</b>	Ventilate the area. Refer to protective measures listed in Sections 7 and 8.
<b>For emergency responders</b>	Use personal protection recommended in Section 8.
<b><u>Environmental precautions</u></b>	Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Should not be released into the environment. Do not allow to enter into soil/subsoil.
<b><u>Methods and material for containment and cleaning up</u></b>	Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.
<b><u>Precautions to prevent secondary hazards</u></b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

## SECTION 7: Handling and storage

<b><u>Precautions for safe handling</u></b>	Use personal protection equipment. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. 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. Do not eat, drink or smoke when using this product. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. See Section 8 for information on appropriate personal protective equipment.
<b><u>Conditions for safe storage,</u></b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat,

**including any incompatibilities** sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. 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

### **Occupational exposure limits**

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

**Note** See section 16 for terms and abbreviations

### **Biological occupational exposure limits**

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

### **Monitoring and observation processes**

No applicable information was found.

### **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.

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

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

**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.

**General hygiene considerations** Do not eat, drink or smoke when using this product. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

## SECTION 9: Physical and chemical properties

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

**Appearance** Liquid  
**Colour** light yellow  
**Physical state** Liquid  
**Odour** Amine  
**Odour threshold** No information available

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>
<b>pH</b>		None known
<b>Melting point / freezing point</b>	-58.6 °C	
<b>Boiling point / boiling range</b>	121 °C	
<b>Flash point</b>	20 °C	
<b>Evaporation rate</b>	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	Miscible 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	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
<b>Additional information</b>		
Explosive properties	Not applicable	
Oxidising properties	Not applicable	

## SECTION 10: Stability and reactivity

<b>Stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	Yes.
<b>Conditions to avoid</b>	Heat, flames and sparks. Exposure to air or moisture over prolonged periods. Excessive heat.
<b>Incompatible materials</b>	Acids. Bases. Oxidising agent.
<b>Hazardous decomposition products</b>	None known based on information supplied.

## SECTION 11: Toxicological information

### Acute toxicity

### Numerical measures of toxicity

### Unknown acute toxicity

### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
1,2-Bis(dimethylamino)ethane	= 406 mg/kg ( Rat ) = 891 mg/kg ( Rat )	= 1230 mg/kg ( Rabbit )	> 1180 ppm ( Rat ) 4 h

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes burns.
<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>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.

<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity — single exposure</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity — 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

<b><u>Ecotoxicity</u></b>	The environmental impact of this product has not been fully investigated.
<b><u>Persistence and degradability</u></b>	No information available.
<b><u>Bioaccumulative potential</u></b>	There is no data for this product.

### Component Information

Chemical name	Partition coefficient
1,2-Bis(dimethylamino)ethane	-0.13

<b><u>Mobility in soil</u></b>	No information available.
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## SECTION 13: Disposal considerations

<b><u>Waste chemicals</u></b>	Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
<b><u>Contaminated packaging</u></b>	Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

## SECTION 14: Transport information

### IMDG

UN number or ID number	UN2372
UN proper shipping name	1,2-DI(DIMETHYLAMINO)ETHANE
Description	UN2372, 1,2-DI(DIMETHYLAMINO)ETHANE, 3, II, (20°C C.C.)
Transport hazard class(es)	3
Packing group	II
Marine pollutant	NP
EmS-No	F-E, S-D
Transport in bulk according to Annex II of MARPOL and the IBC Code	No information available

### IATA

UN number or ID number	UN2372
UN proper shipping name	1,2-Di-(dimethylamino) ethane
Description	UN2372, 1,2-Di-(dimethylamino) ethane, 3, II
Transport hazard class(es)	3
Packing group	II
ERG Code	3L

### China

**UN number or ID number** UN2372  
**UN proper shipping name** 1,2-DI-(DIMETHYLAMINO)ETHANE  
**Transport hazard class(es)** 3  
**Packing group** II  
**Description** UN2372, 1,2-DI-(DIMETHYLAMINO)ETHANE, 3, II

**Special precautions for user**

Please refer to the applicable dangerous goods regulations for additional information

**SECTION 15: Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors:

Not applicable.

Catalogue of occupational diseases:

Not applicable.

**Regulations on the Control over Safety of Hazardous Chemicals****Inventory of hazardous chemicals**

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed. Verify that licence requirements are met.

Flammable liquid - Category 2 Weight-% 100

Chemical name	Inventory of hazardous chemicals
1,2-Bis(dimethylamino)ethane	Listed

**GB 18218-2009 Identification of major hazard installations for dangerous chemicals****Category**

Flammable liquids

**Threshold quantity (T)**

1000

**List of hazardous chemicals under priority management**

Not applicable

**Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used**

Inventory of highly toxic goods

Not applicable

**Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

List of toxic chemicals severely restricted for import and export in China

Not applicable

**Measures for the Environmental Management of New Chemical Substances****IECSC - China Inventory of Existing Chemical Substances** Contact supplier for inventory compliance status.**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** 08-Nov-2022**Revision Note** Reformatted and updated existing information.



**Abbreviations and acronyms****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

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** Ammonium Persulfate

**Revision date** 08-Nov-2022

**Revision Number** 1.1

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

### Product identifier

**Product Name** Ammonium Persulfate

**Catalogue Number(s)** 1610700, 1610754, 1610702, 1610700EDU

**English chemical name** Ammonium persulfate

### Other means of identification

**UN/ID no** UN1444

**CAS No** 7727-54-0

**Pure substance/mixture** Substance

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

CORROSIVE - CAUSES IRREVERSIBLE EYE (AND SKIN) DAMAGE

Risk of serious damage to eyes

May cause allergic respiratory reaction

May cause allergic skin reaction

OXIDISERS

**Appearance** crystalline

**Physical state** Solid

**Odour** Odourless

### Classification of the substance or mixture

**Oxidising solids**

Category 3

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Respiratory sensitisation	Category 1
Skin sensitisation	Category 1
Specific target organ toxicity - Single exposure	Category 3
Hazardous to the Aquatic Environment - Acute Hazard	Category 3

**Label elements****Signal word**

Danger

**Hazard statements**

May intensify fire; oxidiser  
 Harmful if swallowed  
 Harmful if inhaled  
 Causes severe skin burns and eye damage  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
 May cause an allergic skin reaction  
 May cause respiratory irritation  
 Harmful to aquatic life

**Precautionary statements****Prevention**

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  
 Wear protective gloves/protective clothing/eye protection/face protection  
 In case of inadequate ventilation wear respiratory protection  
 Contaminated work clothing should not be allowed out of the workplace  
 Avoid release to the environment  
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

**Response**

Immediately call a POISON CENTRE or doctor  
 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  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
 Wash contaminated clothing before reuse  
 If skin irritation or rash occurs: Get medical advice/attention  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTRE or doctor  
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
 Rinse mouth  
 Do NOT induce vomiting  
 In case of fire: Use water spray to extinguish

**Storage**

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

**Disposal**

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

**Physical and chemical hazards**

Promotes the combustion (oxidiser). Can cause fire and explosion when in contact with flammable substances. Any material contaminated with the product (e.g. clothes) ignites easily and burns vigorously - increased fire hazard.

**Health hazards**

Immediate Health Effects: Harmful. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Contact may cause burns to skin and eyes. Risk of serious damage to eyes. Impairment of vision. Allergic reactions (sensitiser). Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Signs and symptoms may include coughing, gasping, choking and difficulty breathing.

Chronic effects: Not applicable.

**Environmental hazards**

This material is a water pollutant. Keep out of drains, sewers, ditches and waterways. Minimise use of water to prevent environmental contamination

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance**

CAS No 7727-54-0

Chemical name	Weight-%	CAS No
Ammonium persulfate	50 - 100	7727-54-0

**SECTION 4: First aid measures****Description of necessary first aid measures****General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Inhalation**

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. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

**Eye contact**

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.

**Skin contact**

IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. Get immediate medical advice/attention. May cause an allergic skin reaction.

**Ingestion**

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. May produce an allergic reaction.

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

Burning sensation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives. Difficulty in breathing.

**For emergency responders**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or

clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing dust/fume/gas/mist/vapours/spray.

**Note to doctors**

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.

**SECTION 5: Firefighting measures****Extinguishing media****Suitable Extinguishing Media**

Use water. Do not use dry chemicals or foams. CO<sub>2</sub> or Halon may provide limited control. Flood fire area with water from a distance. Move containers from fire area if you can do it without risk. Cool containers with flooding quantities of water until well after fire is out.

**Unsuitable extinguishing media**

Dry chemical. Foam.

**Specific hazards arising from the chemical**

These substances will accelerate burning when involved in a fire. Some may decompose explosively when heated or involved in a fire. May ignite combustibles (wood paper, oil, clothing, etc.). Runoff may create fire or explosion hazard. 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 inhalation and skin contact. May cause sensitisation by skin contact.

**Special protective actions for fire-fighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. Do not move cargo or vehicle if cargo has been exposed to heat. Oxidiser. May ignite combustibles (wood paper, oil, clothing, etc.). Move containers from fire area if you can do it without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.

**SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures****Personal precautions**

Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See section 8 for more information. Stop leak if you can do it without risk. Attention! Corrosive material. Use personal protective equipment as required. Avoid generation of dust. Do not breathe dust.

**Other information**

Keep combustibles (wood, paper, oil, etc) away from spilled material. DO NOT GET WATER INSIDE CONTAINERS. Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

**For emergency responders**

Use personal protection recommended in Section 8.

**Environmental precautions**

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Should not be released into the environment. Do not allow to enter into soil/subsoil.

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

Stop leak if you can do it without risk. Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimise spreading or contact with rain. With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Flush area with flooding quantities of water. Prevent product from entering drains. Cover powder spill with plastic sheet or tarp to minimise spreading and

keep powder dry.

**Precautions to prevent secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## SECTION 7: Handling and storage

**Precautions for safe handling** Use personal protection equipment. Avoid contact with skin, eyes or clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Take off contaminated clothing and wash it before reuse. Provide extract ventilation to points where emissions occur. Avoid breathing vapours or mists. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Avoid breathing dust/fume/gas/mist/vapours/spray. See Section 8 for information on appropriate personal protective equipment.

**Conditions for safe storage, including any incompatibilities** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. Do not store near combustible materials. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials. Store according to product and label instructions.

**Incompatible materials** Organic material. Combustible material. Hydrocarbons. Acids. Bases. Oxidising agent.

## SECTION 8: Exposure controls/personal protection

### Occupational exposure limits

Chemical name	China	ACGIH TLV
Ammonium persulfate - 7727-54-0	-	TWA: 0.1 mg/m <sup>3</sup> persulfate

**Note** See section 16 for terms and abbreviations

### Biological occupational exposure limits

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

### Monitoring and observation processes

No applicable information was found.

### 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.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Wear fire/flame resistant/retardant clothing.

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

<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Avoid breathing dust/fume/gas/mist/vapours/spray.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	crystalline
<b>Colour</b>	white
<b>Physical state</b>	Solid
<b>Odour</b>	Odourless
<b>Odour threshold</b>	No information available

<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>
<b>pH</b>	1.5	
<b>Melting point / freezing point</b>	160 °C	
<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>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Additional information

<b>Explosive properties</b>	Not applicable
<b>Oxidising properties</b>	Not applicable

## SECTION 10: Stability and reactivity

<b>Stability</b>	May cause fire or explosion; strong oxidiser.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Reactivity</b>	Oxidiser.
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	Yes.
<b>Conditions to avoid</b>	Heat, flames and sparks. Incompatible materials. Exposure to air or moisture over prolonged periods. Excessive heat.
<b>Incompatible materials</b>	Organic material. Combustible material. Hydrocarbons. Acids. Bases. Oxidising agent.
<b>Hazardous decomposition products</b>	None known based on information supplied.

**SECTION 11: Toxicological information****Acute toxicity****Numerical measures of toxicity****Unknown acute toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ammonium persulfate	= 495 mg/kg ( Rat )	> 10000 mg/kg ( Rabbit )	> 2.95 mg/L ( Rat ) 4 h

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes burns.
<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 inhalation. May cause sensitisation by skin contact.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity — single exposure</b>	May cause respiratory irritation.
<b>Specific target organ toxicity — 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** Harmful to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ammonium persulfate	-	LC50: =103mg/L (96h, <i>Lepomis macrochirus</i> ) LC50: =76.3mg/L (96h, <i>Oncorhynchus mykiss</i> ) LC50: =323mg/L (96h, <i>Poecilia reticulata</i> )	EC50: =120mg/L (48h, <i>Daphnia magna</i> )

**Persistence and degradability** No information available.**Bioaccumulative potential** No information available.**Mobility in soil** No information available.**SECTION 13: Disposal considerations****Waste chemicals** Should not be released into the environment. Dispose of in accordance with local



regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## SECTION 14: Transport information

### IMDG

UN number or ID number UN1444  
 UN proper shipping name AMMONIUM PERSULPHATE  
 Description UN1444, AMMONIUM PERSULPHATE, 5.1, III  
 Transport hazard class(es) 5.1  
 Packing group III  
 Marine pollutant NP  
 EmS-No F-A, S-Q  
 Transport in bulk according to Annex II of MARPOL and the IBC No information available  
 Code

### IATA

UN number or ID number UN1444  
 UN proper shipping name Ammonium persulphate  
 Description UN1444, Ammonium persulphate, 5.1, III  
 Transport hazard class(es) 5.1  
 Packing group III  
 Special Provisions A803  
 ERG Code 5L

### China

UN number or ID number UN1444  
 UN proper shipping name AMMONIUM PERSULPHATE  
 Transport hazard class(es) 5.1  
 Packing group III  
 Description UN1444, AMMONIUM PERSULPHATE, 5.1, III

### Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

## SECTION 15: Regulatory information

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

#### National regulations

#### Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Catalogue of occupational hazard factors:

Listed. Chemical hazards.

Catalogue of occupational diseases:

Listed. Occupational poisoning.

Chemical name	Category
Ammonium persulfate	Chemical hazards

#### Regulations on the Control over Safety of Hazardous Chemicals

##### Inventory of hazardous chemicals

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed. Verify that licence requirements are met.  
 Weight-% 100

Chemical name	Inventory of hazardous chemicals
Ammonium persulfate	Listed

GB 18218-2009 Identification of major hazard installations for dangerous chemicals

Category

Threshold quantity (T)

Oxidising substances

200

List of hazardous chemicals under priority management

Not applicable

Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used

Inventory of highly toxic goods

Not applicable

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

List of toxic chemicals severely restricted for import and export in China

Not applicable

Measures for the Environmental Management of New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances Contact supplier for inventory compliance status.

**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

08-Nov-2022

Revision Note

Reformatted and updated existing information.

**Abbreviations and acronyms**

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

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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

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** Ethidium Bromide Solution 10 mg/ml

**Revision date** 24-Aug-2022

**Revision Number** 1.1

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

### Product identifier

**Product Name** Ethidium Bromide Solution 10 mg/ml

**Catalogue Number(s)** 1610433, 1610433EDU

### Other means of identification

**Pure substance/mixture** Mixture

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

No significant adverse health effects

**Appearance** aqueous solution

**Physical state** Liquid

**Odour** Odourless

### Classification of the substance or mixture

**Germ cell mutagenicity**

Category 2

### Label elements



**Signal word** Warning**Hazard statements**

Suspected of causing genetic defects

**Precautionary statements****Prevention**

Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF exposed or concerned: Get medical advice/attention

**Disposal**

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

**Physical and chemical hazards**

Not applicable.

**Health hazards**

Immediate Health Effects: Not applicable.

Chronic effects: Contains a known or suspected mutagen.

**Environmental hazards**

Not applicable

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

Chemical name	Weight-%	CAS No
3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide	1 - 2.5	1239-45-8

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

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash skin with soap and water.
<b>Ingestion</b>	Rinse mouth thoroughly with water.
<b><u>Most important symptoms and effects, both acute and delayed</u></b>	No information available.
<b><u>For emergency responders</u></b>	No information available.
<b><u>Note to doctors</u></b>	Treat symptomatically.

**SECTION 5: Firefighting measures****Extinguishing media**

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	No information available.
<b><u>Specific hazards arising from the chemical</u></b>	No information available.
<b><u>Special protective actions for fire-fighters</u></b>	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**

<b>Personal precautions</b>	See section 8 for more information.
<b>For emergency responders</b>	Use personal protection recommended in Section 8.
<b><u>Environmental precautions</u></b>	See Section 12 for additional Ecological Information.
<b><u>Methods and material for containment and cleaning up</u></b>	Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.
<b><u>Precautions to prevent secondary hazards</u></b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

**SECTION 7: Handling and storage**

<b><u>Precautions for safe handling</u></b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. See Section 8 for information on appropriate personal protective equipment.
<b><u>Conditions for safe storage, including any incompatibilities</u></b>	Store locked up. Store according to product and label instructions.
<b>Incompatible materials</b>	None known based on information supplied.

**SECTION 8: Exposure controls/personal protection****Occupational exposure limits**

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

**Note** See section 16 for terms and abbreviations

**Biological occupational exposure limits**

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

**Monitoring and observation processes**

No applicable information was found.

**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).

**Skin and body protection**

Wear suitable protective clothing.

**Hand protection**

Wear suitable gloves.

**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.

**General hygiene considerations**

Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

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

Appearance	aqueous solution
Colour	colourless
Physical state	Liquid
Odour	Odourless
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		None known
Melting point / freezing point	0 °C	
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	Miscible 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	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

**Additional information**

Explosive properties	Not applicable
Oxidising properties	Not applicable
Liquid Density	1.00001

**SECTION 10: Stability and reactivity****Stability**

Stable under normal conditions.

**Possibility of hazardous reactions** None under normal processing.

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

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

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

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

## SECTION 11: Toxicological information

### Acute toxicity

### Numerical measures of toxicity

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

ATEmix (inhalation-dust/mist) 5.01 mg/l

### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
3,8-Diamino-1-ethyl-6-phenylph enantridium bromide	> 2000 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	-

**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.

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity** Contains a known or suspected mutagen. Classification based on data available for ingredients. Suspected of causing genetic defects.

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

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

**Specific target organ toxicity — single exposure** Based on available data, the classification criteria are not met.

**Specific target organ toxicity — 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** The environmental impact of this product has not been fully investigated.

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

**Persistence and degradability** No information available.

**Bioaccumulative potential** No information available.



**Mobility in soil** No information available.

### SECTION 13: Disposal considerations

**Waste chemicals** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

### SECTION 14: Transport information

**IMDG** Not regulated  
**Transport in bulk according to Annex II of MARPOL and the IBC Code** No information available

**IATA** Not regulated

**China** Not regulated

**Special precautions for user**  
 Please refer to the applicable dangerous goods regulations for additional information

### SECTION 15: Regulatory information

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

#### **National regulations**

**Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors: Not applicable.  
 Catalogue of occupational diseases: Not applicable.

**Regulations on the Control over Safety of Hazardous Chemicals**

**Inventory of hazardous chemicals** Not applicable.

**GB 18218-2009 Identification of major hazard installations for dangerous chemicals** Not applicable

**List of hazardous chemicals under priority management** Not applicable

**Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used**

**Inventory of highly toxic goods** Not applicable

**Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

**List of toxic chemicals severely restricted for import and export in China** Not applicable

**Measures for the Environmental Management of New Chemical Substances**

**IECSC - China Inventory of Existing Chemical Substances** Contact supplier for inventory compliance status.

#### **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 24-Aug-2022

Revision Note Reformatted and updated existing information.

#### Abbreviations and acronyms

##### 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

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** Formamide (Deionized)

**Revision date** 24-Jan-2023

**Revision Number** 1.1

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

### Product identifier

**Product Name** Formamide (Deionized)

**Catalogue Number(s)** 9702653

**English chemical name** Formamide

### Other means of identification

**CAS No** 75-12-7

**Pure substance/mixture** Substance

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

No significant adverse health effects

**Appearance** Liquid

**Physical state** Liquid

**Odour** Odourless

### Classification of the substance or mixture

**Reproductive toxicity**

Category 1B

### Label elements

**Signal word**

Danger

**Hazard statements**

May damage fertility or the unborn child

**Precautionary statements****Prevention**

Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF exposed or concerned: Get medical advice/attention

**Disposal**

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

**Physical and chemical hazards**

Not applicable.

**Health hazards**

Immediate Health Effects: Not applicable.

Chronic effects: Contains a known or suspected reproductive toxin.

**Environmental hazards**

Not applicable

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance****CAS No**

75-12-7

Chemical name	Weight-%	CAS No
Formamide	50 - 100	75-12-7

**SECTION 4: First aid measures****Description of necessary first aid measures****General advice**

Show this safety data sheet to the doctor in attendance.

**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**

No information available.

**effects, both acute and delayed****For emergency responders** No information available.**Note to doctors** Treat symptomatically.**SECTION 5: Firefighting measures****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** No information available.**Special protective actions 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** See section 8 for more information.**For emergency responders** Use personal protection recommended in Section 8.**Environmental precautions** See Section 12 for additional Ecological Information.**Methods and material for containment and cleaning up** Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.**Precautions to prevent secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.**SECTION 7: Handling and storage****Precautions for safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. See Section 8 for information on appropriate personal protective equipment.**Conditions for safe storage, including any incompatibilities** Store locked up. Store according to product and label instructions.**Incompatible materials** None known based on information supplied.**SECTION 8: Exposure controls/personal protection****Occupational exposure limits**

Chemical name	China	ACGIH TLV
Formamide - 75-12-7	-	TWA: 1 ppm S*

**Note** See section 16 for terms and abbreviations

#### **Biological occupational exposure limits**

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

#### **Monitoring and observation processes**

No applicable information was found.

#### **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).

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

**Hand protection** Wear suitable gloves.

**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.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

### **SECTION 9: Physical and chemical properties**

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

<b>Appearance</b>	Liquid
<b>Colour</b>	yellow
<b>Physical state</b>	Liquid
<b>Odour</b>	Odourless
<b>Odour threshold</b>	No information available

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>
<b>pH</b>		None known
<b>Melting point / freezing point</b>	2.5 °C	
<b>Boiling point / boiling range</b>	210 °C	
<b>Flash point</b>	154 °C	
<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>	Miscible 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>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

#### **Additional information**

<b>Explosive properties</b>	Not applicable
<b>Oxidising properties</b>	Not applicable

**SECTION 10: Stability and reactivity****Stability** Stable under normal conditions.**Possibility of hazardous reactions** None under normal processing.**Sensitivity to mechanical impact** None.**Sensitivity to static discharge** None.**Conditions to avoid** None known based on information supplied.**Incompatible materials** None known based on information supplied.**Hazardous decomposition products** None known based on information supplied.**SECTION 11: Toxicological information****Acute toxicity****Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Formamide	= 5577 mg/kg ( Rat )	= 6 g/kg ( Rabbit )	> 21 mg/L ( Rat ) 4 h

**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.**Respiratory or skin sensitisation** 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** Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.**Specific target organ toxicity — single exposure** Based on available data, the classification criteria are not met.**Specific target organ toxicity — repeated exposure** Based on available data, the classification criteria are not met.**Target organ effects** Respiratory system. Eyes. Skin. Central nervous system. Reproductive system.**Aspiration hazard** Based on available data, the classification criteria are not met.**SECTION 12: Ecological information****Ecotoxicity**

Chemical name	Algae/aquatic plants	Fish	Crustacea
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Formamide	EC50: >500mg/L (72h, <i>Desmodesmus subspicatus</i> ) EC50: >500mg/L (96h, <i>Desmodesmus subspicatus</i> )	LC50: =9135mg/L (96h, <i>Brachydanio rerio</i> )	EC50: >500mg/L (48h, <i>Daphnia magna</i> )
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**Persistence and degradability** No information available.

**Bioaccumulative potential** There is no data for this product.

#### Component Information

Chemical name	Partition coefficient
Formamide	-0.82

**Mobility in soil** No information available.

### SECTION 13: Disposal considerations

**Waste chemicals** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

### SECTION 14: Transport information

**IMDG** Not regulated  
**Transport in bulk according to Annex II of MARPOL and the IBC Code** No information available

**IATA** Not regulated

**China** Not regulated

#### Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

### SECTION 15: Regulatory information

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

##### National regulations

##### Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Catalogue of occupational hazard factors: Not applicable.  
 Catalogue of occupational diseases: Not applicable.

##### Regulations on the Control over Safety of Hazardous Chemicals

Inventory of hazardous chemicals Not applicable.

GB 18218-2009 Identification of major hazard installations for dangerous chemicals Not applicable

**List of hazardous chemicals under priority management** Not applicable

##### Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used

Inventory of highly toxic goods Not applicable

##### Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

List of toxic chemicals severely restricted for import and export in China Not applicable



**Measures for the Environmental Management of New Chemical Substances**

IECSC - China Inventory of Existing Chemical Substances Contact supplier for inventory compliance status.

**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 24-Jan-2023

Revision Note Reformatted and updated existing information.

**Abbreviations and acronyms****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**

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**End of Safety Data Sheet**



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** 40% Acrylamide/Bis Solution, 37.5:1

**Revision date** 10-Aug-2022

**Revision Number** 2

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

### Product identifier

**Product Name** 40% Acrylamide/Bis Solution, 37.5:1

**Catalogue Number(s)** 1610148, 1610149, 1610148EDU, 1610149EDU

### Other means of identification

**UN/ID no** UN3426

**Pure substance/mixture** Mixture

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### **Legal Entity / Contact Address**

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

Irritating to skin  
Irritating to eyes  
May cause allergic skin reaction  
Contains a known or suspected carcinogen

**Appearance** aqueous solution

**Physical state** Liquid

**Odour** Odourless

### Classification of the substance or mixture

<b>Acute toxicity - Oral</b>	Category 4
<b>Acute toxicity - Dermal</b>	Category 5
<b>Acute toxicity - Inhalation (Dusts/Mists)</b>	Category 4
<b>Skin corrosion/irritation</b>	Category 2
<b>Serious eye damage/eye irritation</b>	Category 2A
<b>Skin sensitisation</b>	Category 1

Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity - Single exposure	Category 1
Specific target organ toxicity - Repeated exposure	Category 1
Hazardous to the Aquatic Environment - Acute Hazard	Category 3
Hazardous to the Aquatic Environment - Chronic Hazard	Category 3

**Label elements****Signal word**

Danger

**Hazard statements**

Harmful if swallowed  
May be harmful in contact with skin  
Harmful if inhaled  
Causes skin irritation  
Causes serious eye irritation  
May cause an allergic skin reaction  
May cause genetic defects  
May cause cancer  
May damage fertility or the unborn child  
Causes damage to organs  
Causes damage to organs through prolonged or repeated exposure  
Harmful to aquatic life with long lasting effects

**Precautionary statements****Prevention**

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  
Contaminated work clothing should not be allowed out of the workplace  
Do not breathe dust/fume/gas/mist/vapours/spray  
Avoid release to the environment  
Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF exposed or concerned: Call a POISON CENTER or doctor  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Call a POISON CENTRE or doctor if you feel unwell  
IF ON SKIN: Wash with plenty of water and soap  
Take off all contaminated clothing and wash it before reuse  
If skin irritation or rash occurs: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
Rinse mouth

**Disposal**

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

**Physical and chemical hazards**

Not applicable.

**Health hazards**

Immediate Health Effects: Harmful. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Causes skin irritation (pain, redness and swelling). Causes severe irritation (tears, blurred vision and redness). Irritating, but will not permanently injure eye tissue. Allergic reactions (sensitiser). Symptoms of allergic reaction may include rash, itching, swelling,

trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.  
Chronic effects: Contains a known or suspected mutagen. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Target organ(s).

**Environmental hazards**

This material is a water pollutant. Keep out of drains, sewers, ditches and waterways. Minimise use of water to prevent environmental contamination

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

Chemical name	Weight-%	CAS No
Acrylamide	35 - 50	79-06-1
Methylene diacrylamide	1 - 2.5	110-26-9

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

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur. If symptoms persist, call a doctor. If breathing has stopped, give artificial respiration. Get medical attention immediately.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a doctor. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
<b>Skin contact</b>	May cause an allergic skin reaction. If symptoms persist, call a doctor. Wash off immediately with soap and plenty of water for at least 15 minutes.
<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 medical attention.

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

Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

**For emergency responders**

Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapours or mists. Use personal protective equipment as required. See section 8 for more information.

**Note to doctors**

May cause sensitisation in susceptible persons. Treat symptomatically.

**SECTION 5: Firefighting measures****Extinguishing media**

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<b>Unsuitable extinguishing media</b>	No information available.
<b><u>Specific hazards arising from the chemical</u></b>	Product is or contains a sensitiser. May cause sensitisation by skin contact.
<b><u>Special protective actions for fire-fighters</u></b>	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

<b>Personal precautions</b>	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapours or mists.
<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.
<b>For emergency responders</b>	Use personal protection recommended in Section 8.
<b><u>Environmental precautions</u></b>	Prevent further leakage or spillage if safe to do so.
<b><u>Methods and material for containment and cleaning up</u></b>	Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.
<b><u>Precautions to prevent secondary hazards</u></b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

## SECTION 7: Handling and storage

<b><u>Precautions for safe handling</u></b>	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. 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. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. See Section 8 for information on appropriate personal protective equipment.
<b><u>Conditions for safe storage, including any incompatibilities</u></b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Store according to product and label instructions.
<b>Incompatible materials</b>	Strong acids. Strong bases. Strong oxidising agents.

## SECTION 8: Exposure controls/personal protection

### Occupational exposure limits

Chemical name	China	ACGIH TLV
Acrylamide - 79-06-1	TWA: 0.3 mg/m <sup>3</sup> Skin* G2A(C**)	dermal sensitizer TWA: 0.03 mg/m <sup>3</sup> inhalable fraction and vapor S*

**Note** See section 16 for terms and abbreviations

**Biological occupational exposure limits**

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

**Monitoring and observation processes**

No applicable information was found.

**Engineering controls**

Showers  
Eyewash stations  
Ventilation systems.

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

<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear suitable protective clothing. Long sleeved clothing.
<b>Hand protection</b>	Wear suitable gloves. Impervious gloves.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

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

<b>Appearance</b>	aqueous solution
<b>Colour</b>	colourless
<b>Physical state</b>	Liquid
<b>Odour</b>	Odourless
<b>Odour threshold</b>	No information available

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>
<b>pH</b>		None known
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point / boiling range</b>	> 100 °C	
<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>	Miscible in water	
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	424 °C	None known
<b>Decomposition temperature</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

**Additional information**

<b>Explosive properties</b>	Not applicable
<b>Oxidising properties</b>	Not applicable

**SECTION 10: Stability and reactivity****Stability** Stable under normal conditions.**Possibility of hazardous reactions** None under normal processing.**Sensitivity to mechanical impact** None.**Sensitivity to static discharge** None.**Conditions to avoid** Excessive heat.**Incompatible materials** Strong acids. Strong bases. Strong oxidising agents.**Hazardous decomposition products** None known based on information supplied.**SECTION 11: Toxicological information****Acute toxicity****Numerical measures of toxicity****The following values are calculated based on chapter 3.1 of the GHS document**

ATEmix (oral)	308.20 mg/kg
ATEmix (dermal)	2,752.50 mg/kg
ATEmix (inhalation-dust/mist)	3.85 mg/l

**Unknown acute toxicity**

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

1 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Acrylamide	= 124 mg/kg ( Rat )	= 1148 mg/kg ( Rabbit )	-
Methylene diacrylamide	= 390 mg/kg ( Rat )	-	-

**Skin corrosion/irritation** Classification based on data available for ingredients. Irritating to skin.**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.**Respiratory or skin sensitisation** May cause sensitisation by skin contact.**Germ cell mutagenicity** Contains a known or suspected mutagen. Classification based on data available for ingredients. May cause genetic defects.**Carcinogenicity** 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	China	IARC
Acrylamide	Probably carcinogenic to humans	Group 2A

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

Group 2A - Probably Carcinogenic to Humans

**Reproductive toxicity** Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.

<b>Specific target organ toxicity — 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.
<b>Specific target organ toxicity — repeated exposure</b>	Causes damage to organs through prolonged or repeated exposure.
<b>Target organ effects</b>	Eyes. Skin. Central nervous system. Peripheral Nervous System (PNS). Reproductive system. Thyroid. Lungs.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

<b>Ecotoxicity</b>	Harmful to aquatic life with long lasting effects.
<b>Unknown aquatic toxicity</b>	0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Acrylamide	-	LC50: 103 - 115mg/L (96h, Pimephales promelas) LC50: =124mg/L (96h, Pimephales promelas) LC50: 81 - 150mg/L (96h, Lepomis macrochirus) LC50: 137 - 191mg/L (96h, Oncorhynchus mykiss) LC50: 74 - 150mg/L (96h, Oncorhynchus mykiss)	EC50: =98mg/L (48h, Daphnia magna)

<b>Persistence and degradability</b>	No information available.
<b>Bioaccumulative potential</b>	There is no data for this product.

### Component Information

Chemical name	Partition coefficient
Acrylamide	-0.9
Methylene diacrylamide	-0.08

<b>Mobility in soil</b>	No information available.
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## SECTION 13: Disposal considerations

<b>Waste chemicals</b>	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
<b>Contaminated packaging</b>	Do not reuse empty containers.

## SECTION 14: Transport information

### IMDG

UN number or ID number	UN3426
UN proper shipping name	ACRYLAMIDE SOLUTION
Description	UN3426, ACRYLAMIDE SOLUTION, 6.1, III
Transport hazard class(es)	6.1
Packing group	III
Marine pollutant	NP
Special Provisions	223



EmS-No F-A, S-A  
 Transport in bulk according to Annex II of MARPOL and the IBC Code No information available

**IATA**

UN number or ID number UN3426  
 UN proper shipping name Acrylamide solution  
 Description UN3426, Acrylamide solution, 6.1, III  
 Transport hazard class(es) 6.1  
 Packing group III  
 Special Provisions A3  
 ERG Code 6L

**China**

UN number or ID number UN3426  
 UN proper shipping name ACRYLAMIDE SOLUTION  
 Transport hazard class(es) 6.1  
 Packing group III  
 Description UN3426, ACRYLAMIDE SOLUTION, 6.1, III

**Special precautions for user**

Please refer to the applicable dangerous goods regulations for additional information

**SECTION 15: Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors:

Listed. Chemical hazards.

Catalogue of occupational diseases:

Listed. Occupational poisoning.

Chemical name	Category
Acrylamide	Chemical hazards

**Regulations on the Control over Safety of Hazardous Chemicals**

Inventory of hazardous chemicals

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed. Weight-% 39

Chemical name	Inventory of hazardous chemicals
Acrylamide	Listed

GB 18218-2009 Identification of major hazard installations for dangerous chemicals

Not applicable

**List of hazardous chemicals under priority management**

Not applicable

**Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used**

Inventory of highly toxic goods

Chemical name	TWA (time-weighted average)	STEL (Short Term Exposure Limit)	Maximum limit value
Acrylamide	0.3 mg/m <sup>3</sup>	0.9 mg/m <sup>3</sup>	

**Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

List of toxic chemicals severely restricted for import and export in China

Not applicable

**Measures for the Environmental Management of New Chemical Substances**

**IECSC - China Inventory of Existing Chemical Substances** Contact supplier for inventory compliance status.

**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** 10-Aug-2022**Revision Note** Reformatted and updated existing information.**Abbreviations and acronyms****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) (AELG(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

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** 50X Tris/Acetic Acid/EDTA Buffer

**Revision date** 04-Apr-2022

**Revision Number** 2.1

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

### Product identifier

**Product Name** 50X Tris/Acetic Acid/EDTA Buffer

**Catalogue Number(s)** 1610743, 1610773, 1660742, 1610773EDU, 1610743EDU, 1660742EDU, 9703685

### Other means of identification

**Pure substance/mixture** Mixture

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

No significant adverse health effects

**Appearance** aqueous solution

**Physical state** Liquid

**Odour** Odourless

### Classification of the substance or mixture

Not classified

### Label elements

#### **Hazard statements**

Not classified

#### **Physical and chemical hazards**

Not applicable.

**Health hazards**

Immediate Health Effects: Not applicable.

Chronic effects: Not applicable.

**Environmental hazards**

Not applicable

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

Not classified.

Chemical name	Weight-%	CAS No
Sodium acetate	10 - 20	127-09-3
Glycine, N,N-1,2-ethanediylbis[N-(carboxymethyl)-, disodium salt, dihydrate	1 - 2.5	6381-92-6

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

<b>General advice</b>	No hazards which require special first aid measures.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash skin with soap and water.
<b>Ingestion</b>	Rinse mouth thoroughly with water.
<b><u>Most important symptoms and effects, both acute and delayed</u></b>	No information available.
<b><u>For emergency responders</u></b>	No information available.
<b><u>Note to doctors</u></b>	Treat symptomatically.

**SECTION 5: Firefighting measures****Extinguishing media**

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

**Special protective actions 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**

See section 8 for more information.

**For emergency responders**

Use personal protection recommended in Section 8.

**Environmental precautions**

See Section 12 for additional Ecological Information.

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

Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.

**Precautions to prevent secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations.

**SECTION 7: Handling and storage****Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. See Section 8 for information on appropriate personal protective equipment.

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

Store according to product and label instructions.

**Incompatible materials**

None known based on information supplied.

**SECTION 8: Exposure controls/personal protection****Occupational exposure limits**

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

**Note**

See section 16 for terms and abbreviations

**Biological occupational exposure limits**

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

**Monitoring and observation processes**

No applicable information was found.

**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).

**Skin and body protection**

Wear suitable protective clothing.

**Hand protection**

Wear suitable gloves.

**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.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

**Appearance** aqueous solution  
**Colour** colourless  
**Physical state** Liquid  
**Odour** Odourless  
**Odour threshold** No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	7-8	
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point / boiling range</b>	100 °C	
<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>	Miscible 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>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Additional information

**Explosive properties** Not applicable  
**Oxidising properties** Not applicable

## SECTION 10: Stability and reactivity

**Stability** Stable under normal conditions.

**Possibility of hazardous reactions** None under normal processing.

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

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

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

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

## SECTION 11: Toxicological information

### Acute toxicity

### Numerical measures of toxicity

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

ATEmix (oral)	11,575.9186 mg/kg
ATEmix (dermal)	16,140.00 mg/kg
ATEmix (inhalation-dust/mist)	40.70 mg/l

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium acetate	= 3530 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 30 g/m <sup>3</sup> ( Rat ) 1 h

<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/eye irritation</b>	Based on available data, the classification criteria are not met.
<b>Respiratory or skin sensitisation</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity — single exposure</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity — 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**

**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 acetate	-	LC50: >100mg/L (96h, Danio rerio)	EC50: >1000mg/L (48h, Daphnia magna)

**Persistence and degradability** No information available.

**Bioaccumulative potential** No information available.

**Mobility in soil** No information available.

**SECTION 13: Disposal considerations**

**Waste chemicals** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**SECTION 14: Transport information**

**IMDG** Not regulated

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

**IATA** Not regulated

**China** Not regulated

**Special precautions for user**

Please refer to the applicable dangerous goods regulations for additional information

## SECTION 15: Regulatory information

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

#### National regulations

##### **Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors:	Not applicable.
Catalogue of occupational diseases:	Not applicable.

##### **Regulations on the Control over Safety of Hazardous Chemicals**

<u>Inventory of hazardous chemicals</u>	Not applicable.
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<u>GB 18218-2009 Identification of major hazard installations for dangerous chemicals</u>	Not applicable
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<b>List of hazardous chemicals under priority management</b>	Not applicable
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##### **Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used**

Inventory of highly toxic goods	Not applicable
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##### **Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

List of toxic chemicals severely restricted for import and export in China	Not applicable
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##### **Measures for the Environmental Management of New Chemical Substances**

<b>IECSC - China Inventory of Existing Chemical Substances</b>	Contact supplier for inventory compliance status.
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#### International Regulations

<b>The Montreal Protocol on Substances that Deplete the Ozone Layer</b>	Not applicable
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<b>The Stockholm Convention on Persistent Organic Pollutants</b>	Not applicable
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<b>The Rotterdam Convention</b>	Not applicable
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## SECTION 16: Other information

<b>Prepared By</b>	Bio-Rad Laboratories, Environmental Health and Safety
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<b>Revision date</b>	04-Apr-2022
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<b>Revision Note</b>	Reformatted and updated existing information.
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#### **Abbreviations and acronyms**

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) (AELG(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**

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**End of Safety Data Sheet**



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** DCode 2X Gel Loading Dye

**Revision date** 24-Aug-2022

**Revision Number** 1.1

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

### Product identifier

**Product Name** DCode 2X Gel Loading Dye

**Catalogue Number(s)** 9702681

### Other means of identification

**Pure substance/mixture** Mixture

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

No significant adverse health effects

**Appearance** aqueous solution

**Physical state** Liquid

**Odour** Odourless

### Classification of the substance or mixture

**Hazardous to the Aquatic Environment - Acute Hazard**

Category 3

### Label elements

#### **Hazard statements**

Harmful to aquatic life

#### **Precautionary statements**

##### **Prevention**

Avoid release to the environment

**Response****Disposal**

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

**Physical and chemical hazards**

Not applicable.

**Health hazards**

Immediate Health Effects: Not applicable.

Chronic effects: Not applicable.

**Environmental hazards**

This material is a water pollutant. Keep out of drains, sewers, ditches and waterways. Minimise use of water to prevent environmental contamination

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

Chemical name	Weight-%	CAS No
1,2,3-Propanetriol	50 - 100	56-81-5

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

No information available.

**For emergency responders**

No information available.

**Note to doctors**

Treat symptomatically.

**SECTION 5: Firefighting measures****Extinguishing media****Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

<b>Unsuitable extinguishing media</b>	No information available.
<b><u>Specific hazards arising from the chemical</u></b>	No information available.
<b><u>Special protective actions for fire-fighters</u></b>	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**

<b>Personal precautions</b>	See section 8 for more information.
<b>For emergency responders</b>	Use personal protection recommended in Section 8.
<b><u>Environmental precautions</u></b>	See Section 12 for additional Ecological Information.
<b><u>Methods and material for containment and cleaning up</u></b>	Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.
<b><u>Precautions to prevent secondary hazards</u></b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

## SECTION 7: Handling and storage

<b><u>Precautions for safe handling</u></b>	Handle in accordance with good industrial hygiene and safety practice. See Section 8 for information on appropriate personal protective equipment.
<b><u>Conditions for safe storage, including any incompatibilities</u></b>	Store according to product and label instructions.
<b>Incompatible materials</b>	None known based on information supplied.

## SECTION 8: Exposure controls/personal protection

### **Occupational exposure limits**

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

**Note** See section 16 for terms and abbreviations

### **Biological occupational exposure limits**

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

### **Monitoring and observation processes**

No applicable information was found.

<b><u>Engineering controls</u></b>	Showers Eyewash stations Ventilation systems.
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### **Individual protection measures, such as personal protective equipment**

<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
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<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Hand protection</b>	Wear suitable gloves.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	aqueous solution
<b>Colour</b>	blue
<b>Physical state</b>	Liquid
<b>Odour</b>	Odourless
<b>Odour threshold</b>	No information available

<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>
<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>	Miscible 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>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Additional information

<b>Explosive properties</b>	Not applicable
<b>Oxidising properties</b>	Not applicable

## SECTION 10: Stability and reactivity

<b>Stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	None under normal processing.
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Conditions to avoid</b>	None known based on information supplied.
<b>Incompatible materials</b>	None known based on information supplied.
<b>Hazardous decomposition products</b>	None known based on information supplied.

## SECTION 11: Toxicological information

**Acute toxicity****Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
1,2,3-Propanetriol	= 12600 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 2.75 mg/L ( Rat ) 4 h

**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.

**Respiratory or skin sensitisation** 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.

**Specific target organ toxicity — single exposure** Based on available data, the classification criteria are not met.

**Specific target organ toxicity — repeated exposure** Based on available data, the classification criteria are not met.

**Target organ effects** Kidney. Respiratory system. Eyes. Skin.

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

**SECTION 12: Ecological information**

**Ecotoxicity** Harmful to aquatic life.

**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
1,2,3-Propanetriol	-	LC50: 51 - 57mL/L (96h, <i>Oncorhynchus mykiss</i> )	-

**Persistence and degradability** No information available.

**Bioaccumulative potential** There is no data for this product.

**Component Information**

Chemical name	Partition coefficient
1,2,3-Propanetriol	-1.75

**Mobility in soil** No information available.

**SECTION 13: Disposal considerations**

**Waste chemicals** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## SECTION 14: Transport information

**IMDG** Not regulated  
**Transport in bulk according to Annex II of MARPOL and the IBC Code** No information available

**IATA** Not regulated

**China** Not regulated

### Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

## SECTION 15: Regulatory information

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

#### National regulations

##### **Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors: Not applicable.  
Catalogue of occupational diseases: Not applicable.

##### **Regulations on the Control over Safety of Hazardous Chemicals**

Inventory of hazardous chemicals Not applicable.

GB 18218-2009 Identification of major hazard installations for dangerous chemicals Not applicable

**List of hazardous chemicals under priority management** Not applicable

##### **Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used**

Inventory of highly toxic goods Not applicable

##### **Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

List of toxic chemicals severely restricted for import and export in China Not applicable

##### **Measures for the Environmental Management of New Chemical Substances**

**IECSC - China Inventory of Existing Chemical Substances** Contact supplier for inventory compliance status.

#### 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** 24-Aug-2022

**Revision Note** Reformatted and updated existing information.

**Abbreviations and acronyms****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

This safety data sheet was created pursuant to the requirements of:  
GB/T 16483-2008, GB/T 17519-2013

**Product Name** DCode Dye Solution

**Revision date** 24-Aug-2022

**Revision Number** 1.1

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

### Product identifier

**Product Name** DCode Dye Solution

**Catalogue Number(s)** 9702660

### Other means of identification

**Pure substance/mixture** Mixture

### 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 Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.  
1st and 2nd Floor, Lumpini 1 Building  
239/2, Rajdamri Road, Lumpini,  
Pathumwan, Bangkok 10330  
Thailand

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Hong Kong: 800-968-793

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

**Recommended use** Laboratory chemicals

## SECTION 2: Hazards identification

### **Emergency Overview**

No significant adverse health effects

**Appearance** aqueous solution

**Physical state** Liquid

**Odour** Odourless

### Classification of the substance or mixture

Not classified

### Label elements

#### **Hazard statements**

Not classified

**Physical and chemical hazards**

Not applicable.

**Health hazards**

Immediate Health Effects: Not applicable.

Chronic effects: Not applicable.

**Environmental hazards**

Not applicable

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

Not applicable

**SECTION 3: Composition/information on ingredients****Substance**

Not applicable.

**Mixture**

Not classified.

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

<b>General advice</b>	No hazards which require special first aid measures.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash skin with soap and water.
<b>Ingestion</b>	Rinse mouth thoroughly with water.
<b><u>Most important symptoms and effects, both acute and delayed</u></b>	No information available.
<b><u>For emergency responders</u></b>	No information available.
<b><u>Note to doctors</u></b>	Treat symptomatically.

**SECTION 5: Firefighting measures****Extinguishing media**

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

**Special protective actions 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**

See section 8 for more information.

**For emergency responders**

Use personal protection recommended in Section 8.

**Environmental precautions**

See Section 12 for additional Ecological Information.

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

Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.

**Precautions to prevent secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations.

**SECTION 7: Handling and storage****Precautions for safe handling**

Handle in accordance with good industrial hygiene and safety practice. See Section 8 for information on appropriate personal protective equipment.

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

Store according to product and label instructions.

**Incompatible materials**

None known based on information supplied.

**SECTION 8: Exposure controls/personal protection****Occupational exposure limits**

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

**Note**

See section 16 for terms and abbreviations

**Biological occupational exposure limits**

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

**Monitoring and observation processes**

No applicable information was found.

**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).

**Skin and body protection**

Wear suitable protective clothing.

**Hand protection**

Wear suitable gloves.

**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.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	aqueous solution
<b>Colour</b>	colourless
<b>Physical state</b>	Liquid
<b>Odour</b>	Odourless
<b>Odour threshold</b>	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	Miscible 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	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

### Additional information

<b>Explosive properties</b>	Not applicable
<b>Oxidising properties</b>	Not applicable

## SECTION 10: Stability and reactivity

**Stability** Stable under normal conditions.

**Possibility of hazardous reactions** None under normal processing.

**Sensitivity to mechanical impact** None.  
**Sensitivity to static discharge** None.

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

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

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

## SECTION 11: Toxicological information

### Acute toxicity

### Numerical measures of toxicity

<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/eye irritation</b>	Based on available data, the classification criteria are not met.
<b>Respiratory or skin sensitisation</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity — single exposure</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity — 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

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

**Persistence and degradability** No information available.

**Bioaccumulative potential** No information available.

**Mobility in soil** No information available.

## SECTION 13: Disposal considerations

**Waste chemicals** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

## SECTION 14: Transport information

**IMDG** Not regulated  
**Transport in bulk according to Annex II of MARPOL and the IBC Code** No information available

**IATA** Not regulated

**China** Not regulated

**Special precautions for user**  
Please refer to the applicable dangerous goods regulations for additional information

## SECTION 15: Regulatory information

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

#### National regulations

##### **Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors:	Not applicable.
Catalogue of occupational diseases:	Not applicable.

##### **Regulations on the Control over Safety of Hazardous Chemicals**

<u>Inventory of hazardous chemicals</u>	Not applicable.
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<u>GB 18218-2009 Identification of major hazard installations for dangerous chemicals</u>	Not applicable
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<b>List of hazardous chemicals under priority management</b>	Not applicable
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##### **Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used**

Inventory of highly toxic goods	Not applicable
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##### **Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

List of toxic chemicals severely restricted for import and export in China	Not applicable
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##### **Measures for the Environmental Management of New Chemical Substances**

<b>IECSC - China Inventory of Existing Chemical Substances</b>	Contact supplier for inventory compliance status.
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#### International Regulations

<b>The Montreal Protocol on Substances that Deplete the Ozone Layer</b>	Not applicable
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<b>The Stockholm Convention on Persistent Organic Pollutants</b>	Not applicable
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<b>The Rotterdam Convention</b>	Not applicable
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## SECTION 16: Other information

<b>Prepared By</b>	Bio-Rad Laboratories, Environmental Health and Safety
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<b>Revision date</b>	24-Aug-2022
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<b>Revision Note</b>	Reformatted and updated existing information.
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#### **Abbreviations and acronyms**

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) (AELG(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

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**End of Safety Data Sheet**