



# SAFETY DATA SHEET

This safety data sheet complies with the requirements of:  
SS586: 2008 (2014)

Revision date 31-Aug-2022

Revision Number 1.1

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

### Product identifier

Product Name TBE-Urea Sample Buffer

### Other means of identification

Catalogue Number(s) 1610768

Pure substance/mixture Mixture

Contains Boric acid (H<sub>3</sub>BO<sub>3</sub>)

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

Recommended use Laboratory chemicals

Uses advised against No information available

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

#### Corporate Headquarters

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

#### Manufacturer

Bio-Rad Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
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USA

#### Legal Entity / Contact Address

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ctsthailand@bio-rad.com

### Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Singapore: 65-31581349

## SECTION 2: Hazards identification

### GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS): SS586: 2008 (2014)

### Reproductive toxicity

Category 1B

### Label elements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS): SS586: 2008 (2014)

**Signal word**

Danger

**Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

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

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

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

Not applicable

**Mixture**

Chemical name	EC No	CAS No	Weight-%
Urea	200-315-5	57-13-6	35 - 50
Boric acid (H <sub>3</sub> BO <sub>3</sub> )	233-139-2	10043-35-3	0.3 - 0.999

Non-hazardous  
ingredients

Proprietary

Balance

**SECTION 4: First aid measures****Description of 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 physician.**Skin contact**

In the case of skin irritation or allergic reactions see a physician. Wash skin with soap and water.

**Ingestion**

Rinse mouth thoroughly with water.

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

No information available.

**For emergency responders**

**Self-protection of the first aider** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

## **SECTION 5: Firefighting measures**

### **Suitable Extinguishing Media**

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

**Unsuitable extinguishing media** No information available.

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

**Specific hazards arising from the chemical** None known.

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

**Special protective equipment and precautions 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** Ensure adequate ventilation.

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

### **Environmental precautions**

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

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

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

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

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

**Reference to other sections** See section 8 for more information. See section 13 for more information.

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

### **Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

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

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

Storage Conditions                      Store locked up.

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

Chemical name	Singapore	ACGIH TLV
Boric acid (H <sub>3</sub> BO <sub>3</sub> ) 10043-35-3		STEL: 6 mg/m <sup>3</sup> inhalable particulate matter TWA: 2 mg/m <sup>3</sup> inhalable particulate matter

**Biological occupational exposure limits**

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

**Appropriate engineering controls**

Engineering controls                      Showers  
   Eyewash stations  
   Ventilation systems.

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

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

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.

Environmental exposure controls                      No information available.

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

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

Property	Values	Remarks • Method
pH	7.5-8.5	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	> 100 °C	
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	No data available	

<b>limits</b>		
<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>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b><u>Other information</u></b>	No information available	

## SECTION 10: Stability and reactivity

### Reactivity

**Reactivity** No information available.

### Chemical stability

**Stability** Stable under normal conditions.

### Explosion data

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

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

### Conditions to avoid

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

### Incompatible materials

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

### Hazardous decomposition products

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

## SECTION 11: Toxicological information

### Information on likely routes of exposure

#### **Product Information**

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

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

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

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

### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** No information available.

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

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

ATEmix (oral) 19,457.30 mg/kg

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg ( Rat )		
Urea	= 8471 mg/kg ( Rat )		
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-	= 5900 mg/kg ( Rat )	> 5000 mg/kg ( Rat )	
Ethylenediaminetetraacetic acid	> 2000 mg/kg ( Rat )		
Boric acid (H3BO3)	= 2660 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 2.12 mg/L ( Rat ) 4 h

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

<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 sensitization</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>	Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.

Chemical name	European Union
Boric acid (H3BO3)	Repr. 1B

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

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

**Aspiration hazard** Classification not possible.

**SECTION 12: Ecological information****Ecotoxicity****Ecotoxicity**

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Urea	-	LC50: 16200 - 18300mg/L (96h, Poecilia reticulata)	EC50: =3910mg/L (48h, Daphnia magna)
Boric acid (H3BO3)	-	-	EC50: 115 - 153mg/L (48h, Daphnia magna)

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

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

Chemical name	Partition coefficient
Urea	<-1.73
Boric acid (H3BO3)	-1.09

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment**

Chemical name	PBT and vPvB assessment
Urea	The substance is not PBT / vPvB PBT assessment does not apply
Boric acid (H3BO3)	The substance is not PBT / vPvB PBT assessment does not apply

**Other adverse effects**

**Other adverse effects** No information available

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

**Waste from residues/unused products** Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.

**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

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

**Environmental Protection and Management (Hazardous Substances) Regulations**  
 Verify that licence requirements are met.

Chemical name	Hazardous Substances	transport
Boric acid (H3BO3)	Exclusions: 1. Boric acid or Sodium borate in medicinal preparations, cosmetics, toilet preparations and substances being preparations intended for human consumption. 2. Preparations containing Boric acid or Sodium borate or a combination of both where water or solvent is not the only other part of the composition	5000kg Boric acid and Sodium borate, total

**Environmental Public Health Act**

Dispose of waste product or used containers according to local regulations.

**Hazardous Waste (Control of Export, Import and Transit) Act**

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

**Poison**

Verify that licence requirements are met Verify that requirements related to using, handling, and storing substances subject to prohibition, authorisation or restriction are met

Chemical name	Poison	Poison Schedule Number
Urea	X	First schedule
Boric acid (H3BO3)	X	First schedule Second schedule Third schedule

**Strategic Goods (Control) Act**

Verify that requirements related to using, handling, and storing substances subject to prohibition, authorisation or restriction are met.

Chemical name	Strategic Goods (Control) Act
Boric acid (H3BO3)	1C225

**Workplace Safety and Health Act**

Comply with the health and safety at work laws.

**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

**International Inventories**

Contact supplier for inventory compliance status

**SECTION 16: Other information****Key or legend to abbreviations and acronyms used in the safety data sheet**

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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

**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  
Australia 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)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
RTECS (Registry of Toxic Effects of Chemical Substances)  
World Health Organization

**Label elements**

P202 - Do not handle until all safety precautions have been read and understood  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Issuing Date** Bio-Rad Laboratories, Environmental Health and Safety

**Revision date** 31-Aug-2022

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

**This safety data sheet complies with the requirements of: SS586: 2008 (2014)**

**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**