



# SAFETY DATA SHEET

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

**Product Name** FIXATION BUFFER - #20367

**Revision date** 26-Oct-2021

**Revision Number** 1

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

### Product identifier

**Product Name** FIXATION BUFFER - #20367

### Other means of identification

**Safety data sheet number** 20367

**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

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Endeavour House  
Langford Business Park  
Kidlington  
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OX5 1GE  
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#### Legal Entity / Contact Address

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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** For research use only

## SECTION 2: Hazards identification

### **Emergency Overview**

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

**Appearance** Clear to semi-clear

**Physical state** Liquid

**Odour** No information available

### Classification of the substance or mixture

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|  |                          |
|--|--------------------------|
| Skin corrosion/irritation                        | Category 3               |
| Respiratory sensitisation                        | Category 1               |
| Skin sensitisation                               | Category 1               |
| Carcinogenicity                                  | Category 2               |
| Specific target organ toxicity - Single exposure | Category 2<br>Category 3 |

#### Label elements



Signal word

Danger

#### **Hazard statements**

Causes mild skin irritation  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause an allergic skin reaction  
Suspected of causing cancer  
May cause damage to organs  
May cause respiratory irritation

#### **Precautionary statements**

##### **Prevention**

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  
Do not breathe dust/fume/gas/mist/vapours/spray  
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

##### **Response**

IF exposed or concerned: Call a POISON CENTER or doctor  
IF INHALED: Remove person to fresh air and keep comfortable for breathing  
If experiencing respiratory symptoms: Call a POISON CENTER or doctor  
IF ON SKIN: Wash with plenty of water and soap  
If skin irritation or rash occurs: Get medical advice/attention  
Take off all contaminated clothing and wash it before reuse

##### **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**

Not applicable.

#### **Health hazards**

Immediate Health Effects: Causes skin irritation (pain, redness and swelling). 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: Contains a known or suspected carcinogen. Target organ(s).

#### **Environmental hazards**

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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     |
|------------------|----------|------------|
| Paraformaldehyde | 2.5 - 5  | 30525-89-4 |

### **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>   | May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical advice/attention.  |
| <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.   |
| <b>Skin contact</b>   | Wash with soap and water. May cause an allergic skin reaction. Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a doctor.  |
| <b>Ingestion</b>  | May produce an allergic reaction. 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> | May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives. Prolonged contact may cause redness and irritation.  |
| <b><u>For emergency responders</u></b>                                    | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. See section 8 for more information. |
| <b><u>Note to doctors</u></b>   | 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. |
|-------------------------------------|---|

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|  |   |
|--|---|
| <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 inhalation and skin contact. 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. |
| <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. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash it before reuse. Avoid breathing vapours or mists. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. 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> | Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. 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

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#### **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.   |
| <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> | Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. 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>      | Clear to semi-clear      |
| <b>Colour</b>          | No information available |
| <b>Physical state</b>  | Liquid                   |
| <b>Odour</b>           | No information available |
| <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>          | 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                     |

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Kinematic viscosity      No data available      None known  
Dynamic viscosity      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)      20,000.00 mg/kg

ATEmix (inhalation-dust/mist)      26.80 mg/l

**Oral LD50**      No information available

**Dermal LD50**      No information available

**Inhalation LC50**      No information available

**Inhalation LC50**      No information available

**Component Information**

| Chemical name    | Oral LD50           | Dermal LD50 | Inhalation LC50                      |
|------------------|---------------------|-------------|--------------------------------------|
| Paraformaldehyde | = 800 mg/kg ( Rat ) | -           | = 1070 mg/m <sup>3</sup> ( Rat ) 4 h |

**Skin corrosion/irritation**      Classification based on data available for ingredients. May cause skin irritation.

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

**Respiratory or skin sensitisation**      May cause sensitisation by inhalation. May cause sensitisation by skin contact.

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

**Carcinogenicity**      Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

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

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|   |   |
|---|---|
| <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), May cause damage to organs, 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

**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

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**(M)SDS Number**

OXAC-20367

Catalogue of occupational hazard factors:  
Catalogue of occupational diseases:

Not applicable.  
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.  
Weight-% 4

| Chemical name    | Inventory of hazardous chemicals |
|------------------|----------------------------------|
| Paraformaldehyde | 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

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

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

**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)

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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**