# KIT SAFETY DATA SHEET

**Kit Product Name** Autoimmune EIA ANA-6 Profile

**Kit Catalogue Number(s)** 12A6

**Revision date** 01-Sep-2021

## Kit Contents

| Catalogue Number(s) | Product Name |
|---|---|
| 220NC, 220ND | Negative Control |
| 220HSP, 220HAN, 220HDS, 220HCE | Conjugate |
| -- | ANA-6 Profile Calibrator |
| 230AW | Wash Concentrate |
| 230AD | Sample Diluent |
| 220TM | Substrate |
| 220SM | Stop Solution |

# SAFETY DATA SHEET

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

**Revision date** 01-Sep-2021 **Revision Number** 1

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

**Product identifier**

**Product Name** Negative Control

**Other means of identification**

**Catalogue Number(s)** 220NC, 220ND

**Pure substance/mixture** Mixture

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

**Recommended use** In-vitro laboratory reagent or component

**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, Diagnostic Group
4000 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

For further information, please contact

**Technical Service** +66 2 652 8313
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)

**Label elements**

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

**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-% |
|---|---|---|---|
| 1,2,3-Propanetriol | 200-289-5 | 56-81-5 | 20 - 35 |
| Non-hazardous ingredients | Proprietary | | Balance |

## SECTION 4: First aid measures

**Description of first aid measures**

**General advice** No hazards which require special first aid measures.

**Inhalation** Remove to fresh air.

**Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin contact** Wash with soap and water.

**Ingestion** Call a physician.

**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** Clean contaminated surface thoroughly.

**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** Ensure adequate ventilation.

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

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

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

| Chemical name | Singapore | ACGIH TLV |
|---|---|---|
| 1,2,3-Propanetriol<br>56-81-5 | PEL: 10 mg/m$^3$ | No data available |

**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** | white |
| **Odour** | Odourless. |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | | None known |
| **Melting point / freezing point** | No data available | None known |
| **Boiling point / boiling range** | > 100 °C | |
| **Flash point** | > 160 °C | |
| **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** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

**Other information** 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**

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**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**

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| 1,2,3-Propanetriol | = 12600 mg/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 570 mg/m³ ( Rat ) 1 h |
| Water | > 90 mL/kg ( Rat ) | | |
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Sodium phosphate dibasic | = 17 g/kg ( Rat ) | | |
| Phosphoric acid, monosodium salt | = 8290 mg/kg ( Rat ) | > 7940 mg/kg ( Rabbit ) | |

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

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

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

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

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

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

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

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

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

**Aspiration hazard** Classification not possible.

## SECTION 12: Ecological information

**Ecotoxicity**

**Ecotoxicity** Harmful to aquatic life.

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

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|---|---|---|---|
| 1,2,3-Propanetriol | - | LC50: 51 - 57mL/L (96h, Oncorhynchus mykiss) | EC50: >500mg/L (24h, 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 |
|---|---|
| 1,2,3-Propanetriol | -1.76 |

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment**

| Chemical name | PBT and vPvB assessment |
|---|---|
| 1,2,3-Propanetriol | The substance is not PBT / vPvB |

**Other adverse effects**

**Other adverse effects** No information available

## SECTION 13: Disposal considerations

**Waste treatment methods**

**Waste from residues/unused products** 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

**ADR** Not regulated

**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 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**
None Listed
**Workplace Safety and Health Act**
See section 8 for national exposure control parameters. 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
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

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

| | |
|---|---|
| **Revision date** | 01-Sep-2021 |
| **Revision Note** | Significant changes throughout SDS. Review all sections. |

**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**

# SAFETY DATA SHEET

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

**Revision date** 25-Aug-2021 **Revision Number** 1.1

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

**Product identifier**

**Product Name** Conjugate

**Other means of identification**

**Catalogue Number(s)** 220HSP, 220HAN, 220HDS, 220HCE

**Pure substance/mixture** Mixture

Contains 3(2H)-Isothiazolone, 2-methyl-

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

**Recommended use** In-vitro laboratory reagent or component

**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, Diagnostic Group
4000 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

For further information, please contact

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

**Emergency telephone number**

**24 Hour Emergency Phone Number** CHEMTREC Singapore: 65-31581349

## SECTION 2: Hazards identification

**GHS Classification**

| | |
|---|---|
| **Skin sensitization** | Category 1A |

**Label elements**

**Signal word**
Warning

**Hazard statements**
H317 - May cause an allergic skin reaction

**Precautionary Statements - Prevention**
Avoid breathing dust/fume/gas/mist/vapours/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
**Precautionary Statements - Response**
If skin irritation or rash occurs: Get medical advice/attention
Take off all contaminated clothing and wash it before reuse
IF ON SKIN: Wash with plenty of water and soap
**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-% |
|---|---|---|---|
| 1,2,3-Propanetriol | 200-289-5 | 56-81-5 | 0.3 - 0.999 |
| Trade secret | .? | - | 0.01 - 0.099 |

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** Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

**Ingestion** Rinse mouth thoroughly with water.

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

**Symptoms** Itching. Rashes. Hives.

**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** May cause sensitization in susceptible persons. 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** | Product is or contains a sensitizer. May cause sensitization by skin contact. |

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

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

| | |
|---|---|
| **Storage Conditions** | Keep containers tightly closed in a dry, cool and well-ventilated place. |

## SECTION 8: Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

| Chemical name | Singapore | ACGIH TLV |
|---|---|---|
| 1,2,3-Propanetriol<br>56-81-5 | PEL: 10 mg/m³ | No data available |

**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** | amber |
| **Odour** | Odourless. |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | | |
| **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 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** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

**Other information** 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** May cause sensitization by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components).

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

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

**Symptoms** Itching. Rashes. Hives.

**Acute toxicity**

**Numerical measures of toxicity**

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | | |

| | | | |
|---|---|---|---|
| 1,2,3-Propanetriol | = 12600 mg/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 570 mg/m³ ( Rat ) 1 h |
| Trade secret | 232 - 249 mg/kg ( Rat )<br>= 120 mg/kg ( Rat ) | = 200 mg/kg ( Rabbit ) | = 0.11 mg/L ( Rat ) 4 h |
| Trade secret | = 455 mg/kg ( Rat ) | | |
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Sodium phosphate dibasic | = 17 g/kg ( Rat ) | | |
| Phosphoric acid, monosodium salt | = 8290 mg/kg ( Rat ) | > 7940 mg/kg ( Rabbit ) | |

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

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

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

**Respiratory or skin sensitization** May cause sensitization by skin contact.

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

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

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

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

**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 0.94151 % of components with unknown hazards to the aquatic environment

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|---|---|---|---|
| 1,2,3-Propanetriol | - | LC50: 51 - 57mL/L (96h, Oncorhynchus mykiss) | EC50: >500mg/L (24h, 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 |
|---|---|
| 1,2,3-Propanetriol | -1.76 |

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment**

| Chemical name | PBT and vPvB assessment |
|---|---|
| 1,2,3-Propanetriol | The substance is not PBT / vPvB |
| Trade secret | The substance is not PBT / vPvB |

**Other adverse effects**

**Other adverse effects** No information available

## SECTION 13: Disposal considerations

**Waste treatment methods**

**Waste from residues/unused products** 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

**ADR** Not regulated

**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 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**
None Listed
**Workplace Safety and Health Act**
See section 8 for national exposure control parameters. 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
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

**Label elements**

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

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

**Revision date** 25-Aug-2021

**Revision Note** SDS sections updated, 1.

**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**

# SAFETY DATA SHEET

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

**Revision date** 01-Sep-2021 **Revision Number** 1

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

**Product identifier**

**Product Name** ANA-6 Profile Calibrator

**Other means of identification**

**Catalogue Number(s)** --

**Pure substance/mixture** Mixture

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

**Recommended use** In-vitro laboratory reagent or component

**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, Diagnostic Group
4000 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

For further information, please contact

**Technical Service** +66 2 652 8313
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)

**Label elements**

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

**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-% |
|---|---|---|---|
| 1,2,3-Propanetriol | 200-289-5 | 56-81-5 | 35 - 50 |
| Non-hazardous ingredients | Proprietary | | Balance |

## SECTION 4: First aid measures

**Description of first aid measures**

**General advice** No hazards which require special first aid measures.

**Inhalation** Remove to fresh air.

**Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin contact** Wash with soap and water.

**Ingestion** Call a physician.

**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** Clean contaminated surface thoroughly.

**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** Ensure adequate ventilation.

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

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

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

| Chemical name | Singapore | ACGIH TLV |
|---|---|---|
| 1,2,3-Propanetriol<br>56-81-5 | PEL: 10 mg/m$^3$ | No data available |

**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** | white |
| **Odour** | Odourless. |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | | None known |
| **Melting point / freezing point** | No data available | None known |
| **Boiling point / boiling range** | > 100 °C | |
| **Flash point** | > 160 °C | |
| **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** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

**Other information** 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**

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| 1,2,3-Propanetriol | = 12600 mg/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 570 mg/m³ ( Rat ) 1 h |
| Water | > 90 mL/kg ( Rat ) | | |
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Sodium azide | = 27 mg/kg ( Rat ) | = 20 mg/kg ( Rabbit )<br>= 50 mg/kg ( Rat ) | |
| Sodium phosphate dibasic | = 17 g/kg ( Rat ) | | |
| Phosphoric acid, monosodium salt | = 8290 mg/kg ( Rat ) | > 7940 mg/kg ( Rabbit ) | |

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

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

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

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

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

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

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

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

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

**Aspiration hazard** Classification not possible.

## SECTION 12: Ecological information

**Ecotoxicity**

**Ecotoxicity** Harmful to aquatic life.

**Unknown aquatic toxicity** Contains 0.007 % of components with unknown hazards to the aquatic environment

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|---|---|---|---|
| 1,2,3-Propanetriol | - | LC50: 51 - 57mL/L (96h, Oncorhynchus mykiss) | EC50: >500mg/L (24h, 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 |
|---|---|
| 1,2,3-Propanetriol | -1.76 |

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment**

| Chemical name | PBT and vPvB assessment |
|---|---|
| 1,2,3-Propanetriol | The substance is not PBT / vPvB |

**Other adverse effects**

**Other adverse effects** No information available

## SECTION 13: Disposal considerations

**Waste treatment methods**

**Waste from residues/unused products** 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

**ADR** Not regulated

**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 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**
None Listed
**Workplace Safety and Health Act**
See section 8 for national exposure control parameters. 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
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

**Label elements**

| | |
|---|---|
| **Issuing Date** | Bio-Rad Laboratories, Environmental Health and Safety |
| **Revision date** | 01-Sep-2021 |
| **Revision Note** | Significant changes throughout SDS. Review all sections. |

**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**

# SAFETY DATA SHEET

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

**Revision date** 27-Aug-2021 **Revision Number** 1.1

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

**Product identifier**

**Product Name** Wash Concentrate

**Other means of identification**

**Catalogue Number(s)** 230AW

**Pure substance/mixture** Mixture

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

**Recommended use** In-vitro laboratory reagent or component

**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, Diagnostic Group
4000 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

For further information, please contact

**Technical Service** +66 2 652 8313
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)

**Label elements**

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

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

## SECTION 3: Composition/information on ingredients

**Substance**

Not applicable

**Mixture**

The product contains no substances which at their given concentration, are considered to be hazardous to health

| Chemical name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Water | 231-791-2 | 7732-18-5 | 50 - 100 |
| Sodium chloride | 231-598-3 | 7647-14-5 | 10 - 20 |
| Sodium phosphate dibasic | 231-448-7 | 7558-79-4 | 1 - 2.5 |
| Polyoxyethylene sorbitan monolaurate | - | 9005-64-5 | 1 - 2.5 |
| Phosphoric acid, monosodium salt | 231-449-2 | 7558-80-7 | 0.3 - 0.999 |
| Non-hazardous ingredients | Proprietary | | Balance |

## SECTION 4: First aid measures

**Description of first aid measures**

**General advice** No hazards which require special first aid measures.

**Inhalation** Remove to fresh air.

**Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

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

**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** | Ensure adequate ventilation. |
| **General hygiene considerations** | Handle in accordance with good industrial hygiene and safety practice. |

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

| | |
|---|---|
| **Storage Conditions** | Keep container tightly closed in a dry and well-ventilated place. |

## SECTION 8: Exposure controls/personal protection

**Control parameters**

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

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

**Appropriate engineering controls**

| | |
|---|---|
| **Engineering controls** | Showers<br>Eyewash stations<br>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** | white |
| **Odour** | Odourless. |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | 7-8 | |
| **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 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** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

**Other information** 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)** 24,832.30 mg/kg

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | | |
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m$^3$ ( Rat ) 1 h |
| Sodium phosphate dibasic | = 17 g/kg ( Rat ) | | |
| Polyoxyethylene sorbitan monolaurate | = 37000 mg/kg ( Rat )<br>= 36700 µL/kg ( Rat ) | | |
| Phosphoric acid, monosodium salt | = 8290 mg/kg ( Rat ) | > 7940 mg/kg ( Rabbit ) | |

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

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

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

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

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

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

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

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

**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 |
|---|---|---|---|
| Sodium chloride | - | LC50: 4747 - 7824mg/L (96h, Oncorhynchus mykiss)<br>LC50: 5560 - 6080mg/L (96h, Lepomis macrochirus)<br>LC50: 6020 - 7070mg/L (96h, Pimephales promelas)<br>LC50: 6420 - 6700mg/L (96h, Pimephales promelas)<br>LC50: =12946mg/L (96h, Lepomis macrochirus)<br>LC50: =7050mg/L (96h, Pimephales promelas) | EC50: 340.7 - 469.2mg/L (48h, Daphnia magna)<br>EC50: =1000mg/L (48h, Daphnia magna) |

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** No information available.

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment** No information available

| Chemical name | PBT and vPvB assessment |
|---|---|
| Sodium chloride | The substance is not PBT / vPvB PBT assessment does not apply |
| Sodium phosphate dibasic | PBT assessment does not apply |
| Polyoxyethylene sorbitan monolaurate | The substance is not PBT / vPvB PBT assessment does not apply |
| Phosphoric acid, monosodium salt | 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 in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

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

## SECTION 14: Transport information

**ADR** Not regulated

**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 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**
None Listed
**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
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

**Label elements**

| | |
|---|---|
| **Issuing Date** | Bio-Rad Laboratories, Environmental Health and Safety |
| **Revision date** | 27-Aug-2021 |
| **Revision Note** | Significant changes throughout SDS. Review all sections. |

**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**

# SAFETY DATA SHEET

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

**Revision date** 01-Sep-2021 **Revision Number** 1

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

**Product identifier**

**Product Name** Sample Diluent

**Other means of identification**

**Catalogue Number(s)** 230AD

**Pure substance/mixture** Mixture

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

**Recommended use** In-vitro laboratory reagent or component

**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, Diagnostic Group
4000 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

For further information, please contact

**Technical Service** +66 2 652 8313
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)

**Label elements**

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

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

## SECTION 3: Composition/information on ingredients

**Substance**

Not applicable

**Mixture**

The product contains no substances which at their given concentration, are considered to be hazardous to health

| | | |
|---|---|---|
| Non-hazardous ingredients | Proprietary | Balance |

## SECTION 4: First aid measures

**Description of first aid measures**

**General advice** No hazards which require special first aid measures.

**Inhalation** Remove to fresh air.

**Eye contact** Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

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

**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** Ensure adequate ventilation.

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

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

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

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

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

**Appropriate engineering controls**

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

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

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

**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** | white |
| **Odour** | Odourless. |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | 7.3 | |
| **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 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** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

**Other information** 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**

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**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**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | | |
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Sodium azide | = 27 mg/kg ( Rat ) | = 20 mg/kg ( Rabbit )<br>= 50 mg/kg ( Rat ) | |
| Sodium phosphate dibasic | = 17 g/kg ( Rat ) | | |
| Phosphoric acid, monosodium salt | = 8290 mg/kg ( Rat ) | > 7940 mg/kg ( Rabbit ) | |

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

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

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

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

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

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

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

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

**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

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** No information available.

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment** No information available

**Other adverse effects**

**Other adverse effects** No information available

## SECTION 13: Disposal considerations

**Waste treatment methods**

**Waste from residues/unused products** 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

**ADR** Not regulated

**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 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**
None Listed
**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
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

**Label elements**

| | |
|---|---|
| **Issuing Date** | Bio-Rad Laboratories, Environmental Health and Safety |
| **Revision date** | 01-Sep-2021 |
| **Revision Note** | Significant changes throughout SDS. Review all sections. |

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

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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 complies with the requirements of:
SS586: 2008 (2014)

**Revision date** 25-Aug-2021 **Revision Number** 1.1

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

**Product identifier**

**Product Name** Substrate

**Other means of identification**

**Catalogue Number(s)** 220TM

**UN proper shipping name** ALCOHOLS, N.O.S.

**Description** 1987, ALCOHOLS, N.O.S. (Methanol Solution, Acetone), 3, II

**Pure substance/mixture** Mixture

Contains Methanol

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

**Recommended use** In-vitro laboratory reagent or component

**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, Diagnostic Group
4000 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

For further information, please contact

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

**Emergency telephone number**

**24 Hour Emergency Phone Number** CHEMTREC Singapore: 65-31581349

## SECTION 2: Hazards identification

**GHS Classification**

| | |
|---|---|
| **Acute toxicity - Oral** | Category 4 |
| **Acute toxicity - Dermal** | Category 4 |
| **Acute toxicity - Inhalation (Dusts/Mists)** | Category 4 |
| **Specific target organ toxicity (single exposure)** | Category 1 Category 3 |

**Label elements**

**Signal word**
Danger

**Hazard statements**
H332 - Harmful if inhaled
H370 - Causes damage to organs
H312 - Harmful in contact with skin
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H302 - Harmful if swallowed

**Precautionary Statements - Prevention**
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
Wear protective gloves/protective clothing/eye protection/face protection
**Precautionary Statements - Response**
Call a POISON CENTRE or doctor if you feel unwell
Take off all contaminated clothing and wash it before reuse
IF ON SKIN: Wash with plenty of water and soap
Call a POISON CENTRE or doctor if you feel unwell
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Rinse mouth
IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
**Precautionary Statements - Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed
**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-% |
|---|---|---|---|
| Methanol | 200-659-6 | 67-56-1 | 10 - 20 |
| Acetone | 200-662-2 | 67-64-1 | 10 - 20 |
| Dimethyl sulfoxide | 200-664-3 | 67-68-5 | 2.5 - 5 |
| Hydrogen peroxide | 231-765-0 | 7722-84-1 | 0.01 - 0.099 |
| 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. IF exposed or concerned: Get medical advice/attention. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately. |
| **Eye contact** | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. |
| **Skin contact** | Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician. |
| **Ingestion** | Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention. |

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

| | |
|---|---|
| **Symptoms** | Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Coughing and/ or wheezing. Difficulty in breathing. |

**For emergency responders**

| | |
|---|---|
| **Self-protection of the first aider** | Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapors or mists. Use personal protective equipment as required. See section 8 for more information. |

**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** | Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid breathing vapors or mists. |
| **Other information** | Refer to protective measures listed in Sections 7 and 8. |
| **For emergency responders** | Use personal protection recommended in Section 8. |

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

**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. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

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

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

| Chemical name | Singapore | ACGIH TLV |
|---|---|---|
| Methanol<br>67-56-1 | PEL: 200 ppm<br>PEL: 262 mg/m³<br>STEL: 250 ppm<br>STEL: 328 mg/m³ | STEL: 250 ppm<br>TWA: 200 ppm<br>S* |
| Acetone<br>67-64-1 | PEL: 750 ppm<br>PEL: 1780 mg/m³<br>STEL: 1000 ppm<br>STEL: 2380 mg/m³ | STEL: 500 ppm<br>TWA: 250 ppm |
| Hydrogen peroxide<br>7722-84-1 | PEL: 1 ppm<br>PEL: 1.4 mg/m³ | TWA: 1 ppm |

**Biological occupational exposure limits**

| Chemical name | Singapore | ACGIH |
|---|---|---|
| Methanol<br>67-56-1 | No data available | 15 mg/L - urine (Methanol) - end of shift |
| Acetone<br>67-64-1 | No data available | 25 mg/L - urine (Acetone) - end of shift |

**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. Long sleeved 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** | Liquid |
| **Colour** | white |
| **Odour** | Alcohol. |
| **Odour threshold** | No information available |

| **Property** | **Values** | **Remarks • Method** |
|---|---|---|
| **pH** | | None known |
| **Melting point / freezing point** | No data available | None known |
| **Boiling point / boiling range** | 55.8-56.6 °C | |
| **Flash point** | 16 °C | |
| **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** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

| | |
|---|---|
| **Other information** | No information available |
| **Liquid Density** | 0.93909 |

## 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** Excessive heat.

**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** May cause drowsiness or dizziness. Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Harmful by inhalation. (based on components).

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

**Skin contact** May be absorbed through the skin in harmful amounts. Harmful in contact with skin. (based on components).

**Ingestion** Specific test data for the substance or mixture is not available. Harmful if swallowed. (based on components).

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

**Symptoms** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Coughing and/ or wheezing.

**Acute toxicity**

**Numerical measures of toxicity**

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

| | |
|---|---|
| **ATEmix (oral)** | 665.7484 mg/kg |
| **ATEmix (dermal)** | 1,997.00 mg/kg |
| **ATEmix (inhalation-dust/mist)** | 3.34 mg/l |
| **ATEmix (inhalation-vapor)** | 241.80 mg/l |

3 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | | |
| Methanol | = 6200 mg/kg ( Rat ) | = 15840 mg/kg ( Rabbit )<br>= 15800 mg/kg ( Rabbit ) | = 22500 ppm ( Rat ) 8 h<br>= 64000 ppm ( Rat ) 4 h |
| Acetone | = 5800 mg/kg ( Rat ) | > 15700 mg/kg ( Rabbit ) | = 50100 mg/m$^3$ ( Rat ) 8 h |
| Dimethyl sulfoxide | = 28300 mg/kg ( Rat )<br>= 14500 mg/kg ( Rat ) | = 40 g/kg ( Rat ) | > 5.33 mg/L ( Rat ) 4 h |

| | | | |
|---|---|---|---|
| Hydrogen peroxide | = 1518 mg/kg ( Rat ) | = 9200 mg/kg ( Rabbit ) | = 2000 mg/m³ ( Rat ) 4 h |

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

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

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

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

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

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

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

**STOT - single exposure** Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs in contact with skin. May cause respiratory irritation. May cause drowsiness or dizziness.

**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 |
|---|---|---|---|
| Methanol | - | LC50: 13500 - 17600mg/L (96h, Lepomis macrochirus)<br>LC50: 18 - 20mL/L (96h, Oncorhynchus mykiss)<br>LC50: 19500 - 20700mg/L (96h, Oncorhynchus mykiss)<br>LC50: =28200mg/L (96h, Pimephales promelas)<br>LC50: >100mg/L (96h, Pimephales promelas) | - |
| Acetone | - | LC50: 4.74 - 6.33mL/L (96h, Oncorhynchus mykiss)<br>LC50: 6210 - 8120mg/L (96h, Pimephales promelas)<br>LC50: =8300mg/L (96h, Lepomis macrochirus) | EC50: 10294 - 17704mg/L (48h, Daphnia magna)<br>EC50: 12600 - 12700mg/L (48h, Daphnia magna) |
| Dimethyl sulfoxide | EC50: 12350 - 25500mg/L (96h, Skeletonema costatum) | LC50: 33 - 37g/L (96h, Oncorhynchus mykiss)<br>LC50: =34000mg/L (96h, Pimephales promelas)<br>LC50: =41.7g/L (96h, Cyprinus carpio)<br>LC50: >40g/L (96h, Lepomis macrochirus) | EC50: =7000mg/L (24h, Daphnia species) |
| Hydrogen peroxide | EC50: =2.5mg/L (72h, Chlorella vulgaris) | LC50: 10.0 - 32.0mg/L (96h, Oncorhynchus mykiss) | EC50: 18 - 32mg/L (48h, Daphnia magna) |

| | | | |
|---|---|---|---|
| | | LC50: 18 - 56mg/L (96h, Lepomis macrochirus) LC50: =16.4mg/L (96h, Pimephales promelas) | EC50: =7.7mg/L (24h, 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 |
|---|---|
| Methanol | -0.77 |
| Acetone | -0.24 |
| Dimethyl sulfoxide | -2.03 |

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment**

| Chemical name | PBT and vPvB assessment |
|---|---|
| Methanol | The substance is not PBT / vPvB PBT assessment does not apply Further information relevant for the PBT assessment is necessary |
| Acetone | The substance is not PBT / vPvB |
| Dimethyl sulfoxide | The substance is not PBT / vPvB PBT assessment does not apply |
| Hydrogen peroxide | 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 in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

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

## SECTION 14: Transport information

**ADR**

**UN number or ID number** 1987
**UN proper shipping name** ALCOHOLS, N.O.S.
**Transport hazard class(es)** 3
**Labels** 3
**Packing group** II
**Classification code** F1
**Tunnel restriction code** (D/E)
**Special Provisions** 274, 601, 640C
**Description** 1987, ALCOHOLS, N.O.S. (Methanol Solution, Acetone), 3, II

**IMDG**

| | |
|---|---|
| **UN number or ID number** | UN1987 |
| **UN proper shipping name** | ALCOHOLS, N.O.S. |
| **Description** | UN1987, ALCOHOLS, N.O.S. (Methanol Solution, Acetone), 3, II, (16°C C.C.) |
| **Transport hazard class(es)** | 3 |
| **Packing group** | II |
| **Marine pollutant** | NP |
| **Special Provisions** | 274 |
| **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** | UN1987 |
| **UN proper shipping name** | Alcohols, n.o.s. |
| **Description** | UN1987, Alcohols, n.o.s. (Methanol Solution, Acetone), 3, II |
| **Transport hazard class(es)** | 3 |
| **Packing group** | II |
| **Special Provisions** | A3, A180 |
| **ERG Code** | 3L |

## SECTION 15: Regulatory information

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

**Singapore**

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

| Chemical name | Arms and Explosives Act |
|---|---|
| Hydrogen peroxide | Present except preparations and solutions containing <=20%, weight in weight, of Hydrogen peroxide |

**Environmental Public Health Act**
Dispose of waste product or used containers according to local regulations.

**Fire Safety (Petroleum and Flammable Materials) Regulations**
Verify that licence requirements are met.

| Chemical name | Regulated | Hazard class |
|---|---|---|
| Methanol | SCDMNL1230L2 | 3 |
| Acetone | SCDACE1090L2 | 3 |

**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.

**Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations**
Regulated. See section 14 for more information.

**Misuse of Drugs Act**
Verify that requirements related to using, handling, and storing substances subject to prohibition, authorisation or restriction are met.

| Chemical name | Misuse of Drugs Act |
|---|---|
| Acetone | Third schedule - Part II |

**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 |
|---|---|---|
| Dimethyl sulfoxide | X | First schedule<br>Third schedule |

**Workplace Safety and Health Act**
See section 8 for national exposure control parameters. 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
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

**Label elements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable
P280 - Wear protective gloves/protective clothing/eye protection/face protection

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

**Revision date** 25-Aug-2021

**Revision Note** SDS sections updated, 1.

**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**

# SAFETY DATA SHEET

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

**Revision date** 25-Aug-2021 **Revision Number** 1.1

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

**Product identifier**

**Product Name** Stop Solution

**Other means of identification**

**Catalogue Number(s)** 220SM

**UN proper shipping name** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

**Description** 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric acid, Hydrochloric acid), 8, III

**Pure substance/mixture** Mixture

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

**Recommended use** In-vitro laboratory reagent or component

**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, Diagnostic Group
4000 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

For further information, please contact

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

**Emergency telephone number**

**24 Hour Emergency Phone Number** CHEMTREC Singapore: 65-31581349

## SECTION 2: Hazards identification

**GHS Classification**

| | |
|---|---|
| **Corrosive to metals** | Category 1 |

**Label elements**

**Signal word**
Warning

**Hazard statements**

H290 - May be corrosive to metals

**Precautionary Statements - Response**
Absorb spillage to prevent material damage

**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-% |
|---|---|---|---|
| Sulfuric acid | 231-639-5 | 7664-93-9 | 1 - 2.5 |
| Hydrochloric acid | 231-595-7 | 7647-01-0 | 1 - 2.5 |
| 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. Get medical attention immediately if symptoms occur.

**Eye contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

**Skin contact** Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

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

**Symptoms** No information available.

**For emergency responders**

**Self-protection of the first aider** Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

**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** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

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

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

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

**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.

**General hygiene considerations** Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended.

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

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

materials.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

| Chemical name | Singapore | ACGIH TLV |
|---|---|---|
| Sulfuric acid<br>7664-93-9 | PEL: 1 mg/m³<br>STEL: 3 mg/m³ | TWA: 0.2 mg/m³ thoracic particulate matter |
| Hydrochloric acid<br>7647-01-0 | STEL: 5 ppm<br>STEL: 7.5 mg/m³ | Ceiling: 2 ppm |

**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** clear liquid
**Colour** colourless
**Odour** Odourless.
**Odour threshold** No information available

| Property | Values | Remarks • Method |
|---|---|---|
| **pH** | | |
| **Melting point / freezing point** | 0 °C | |
| **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 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** | | None known |
| **Kinematic viscosity** | No data available | None known |
| **Dynamic viscosity** | No data available | None known |

**Other information** 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** Exposure to air or moisture over prolonged periods.

**Incompatible materials**

**Incompatible materials** Oxidizing agent.

**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)** 15,866.6667 mg/kg

**ATEmix (dermal)** 96,600.00 mg/kg
**ATEmix (inhalation-dust/mist)** 33.40 mg/l

**Component Information**

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | | |
| Hydrochloric acid | 238 - 277 mg/kg ( Rat ) | > 5010 mg/kg ( Rabbit ) | = 1.68 mg/L ( Rat ) 1 h |
| Sulfuric acid | = 2140 mg/kg ( Rat ) | | 85 - 103 mg/m³ ( Rat ) 1 h |

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

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

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

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

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

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

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

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

**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 |
|---|---|---|---|
| Sulfuric acid | - | LC50: >500mg/L (96h, Brachydanio rerio) | EC50: =29mg/L (24h, Daphnia magna) |
| Hydrochloric acid | - | LC50: =282mg/L (96h, Gambusia affinis) | - |

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** No information available.

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment**

| Chemical name | PBT and vPvB assessment |
|---|---|
| Sulfuric acid | The substance is not PBT / vPvB PBT assessment does not apply |
| Hydrochloric acid | 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 in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

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

## SECTION 14: Transport information

**ADR**

**UN number or ID number** 3264
**UN proper shipping name** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
**Transport hazard class(es)** 8
**Labels** 8
**Packing group** III
**Classification code** C1
**Tunnel restriction code** (E)
**Special Provisions** 274
**Description** 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric acid, Hydrochloric acid), 8, III

**IMDG**

**UN number or ID number** UN3264
**UN proper shipping name** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
**Description** UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric acid, Hydrochloric acid), 8, III
**Transport hazard class(es)** 8
**Packing group** III
**Marine pollutant** NP
**Special Provisions** 223, 274
**EmS-No** F-A, S-B
**Transport in bulk according to Annex II of MARPOL and the IBC Code** No information available

**IATA**

**UN number or ID number** UN3264
**UN proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s.
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid, Hydrochloric acid), 8, III
**Transport hazard class(es)** 8
**Packing group** III
**Special Provisions** A3, A803
**ERG Code** 8L

## 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 |
|---|---|---|
| Sulfuric acid | Exclusions: 1. Substances containing <=9%, weight in weight, of Sulphuric acid. 2. Accumulators. 3. Batteries. 4. Fire extinguishers. 5. Photographic developers containing <=20%, weight in weight, of Sulphuric acid | 1000kg |
| Hydrochloric acid | Present<br>Exclusions: Substances containing <=9%, weight in weight, of Hydrochloric acid | 1000kg all forms<br>500kg regulated under Hydrogen chloride |

| Chemical name | Tracking controls are required unless an exemption or exception applies |
|---|---|
| Hydrochloric acid | X anhydrous;except <1 MT per trip |

**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.

**Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations**
Regulated. See section 14 for more information.

**Misuse of Drugs Act**
Verify that requirements related to using, handling, and storing substances subject to prohibition, authorisation or restriction are met.

| Chemical name | Misuse of Drugs Act |
|---|---|
| Sulfuric acid | Third schedule - Part II |
| Hydrochloric acid | Third schedule - Part II |

**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 |
|---|---|---|
| Hydrochloric acid | | First schedule |

**Workplace Safety and Health Act**
See section 8 for national exposure control parameters. 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
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

**Label elements**

P234 - Keep only in original packaging
P234 - Keep only in original container
P406 - Store in corrosive resistant stainless steel container with a resistant inner liner

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

**Revision date** 25-Aug-2021

**Revision Note** SDS sections updated, 1.

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

**Disclaimer**

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**End of Safety Data Sheet**