

Revision date 14-Feb-2024

Revision Number 1.1

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

Product identifier

Product Name Bio-Plex Pro SARS-CoV-2 Neutralization Antibody Standard

Other means of identification

Catalogue Number(s) 12016945, 12016995

Pure substance/mixture Mixture

Contains 5-Chloro-2-methyl-3(2H)-isothiazolone, mixture with 2-methyl-3(2H)-isothiazolone

Recommended use of the chemical and restrictions on use

Recommended use Laboratory chemicals

Uses advised against No information available

Details of the supplier of the safety data sheet

Corporate Headquarters

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

For further information, please contact

Manufacturer

Bio-Rad Laboratories, Life Science Group
2000 Alfred Nobel Drive
Hercules, California 94547
USA

Legal Entity / Contact Address

Bio-Rad Laboratoires (Singapore) PTE LTD
3A International Business Park #11-10/16
ICON@IBP
Singapore 609935

Technical Service 6424 0262
ctssingapore@bio-rad.com

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Singapore: 65-31581349

SECTION 2: Hazards identification

GHS Classification

| | |
|---------------------------|-------------|
| Skin sensitisation | 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

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 (EU Index No) | CAS No | Weight-% |
|-------------------|-----------------------------|------------|--------------|
| Trade secret | Listed | - | 0.3 - 0.99 |
| Trade secret | Listed | - | 0.1 - 0.299 |
| Sodium azide | (011-004-00-7) 247-852-1 | 26628-22-8 | 0.01 - 0.099 |
| Trade secret | Listed | - | 0.001 - 0.01 |
| Sodium hydroxide | (011-002-00-6) 215-185-5 | 1310-73-2 | < 0.001 |
| Hydrochloric acid | (017-002-00-2) 231-595-7 | 7647-01-0 | < 0.001 |

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 doctor.

Skin contact

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

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 doctors May cause sensitisation 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 sensitiser. May cause sensitisation 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 labelled 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 it 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 |
|--------------------------------|--|--|
| Trade secret | | TWA: 2.5 mg/m ³ benzoate inhalable particulate matter S* |
| Sodium azide 26628-22-8 | STEL: 0.29 mg/m ³ STEL: 0.11 ppm | Ceiling: 0.29 mg/m ³ Sodium azide Ceiling: 0.11 ppm Hydrazoic acid vapor |
| Sodium hydroxide 1310-73-2 | STEL: 2 mg/m ³ | Ceiling: 2 mg/m ³ |
| Hydrochloric acid 7647-01-0 | STEL: 5 ppm STEL: 7.5 mg/m ³ | 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 aqueous solution
Colour colourless
Odour Odourless.

Odour threshold No information available

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|---|-------------------|-------------------------|
| pH | | None known |
| Melting point / freezing point | No data available | None known |
| Initial boiling point and boiling range | > 100 °C | |
| Flash point | No data available | None known |
| Evaporation rate | No data available | None known |
| Flammability | 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 |
| Relative 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 sensitisation 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

No information available

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

Component Information

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|-------------------|-------------------------|--------------------------|-------------------------------|
| Water | > 90 mL/kg (Rat) | | |
| Trade secret | = 2800 mg/kg (Rat) | > 2000 mg/kg (Rat) | |
| Trade secret | = 3 g/kg (Rat) | > 10000 mg/kg (Rabbit) | > 42 mg/L (Rat) 1 h |
| Trade secret | = 37000 mg/kg (Rat) | | > 5.1 mg/L (Rat) 4 h |
| Trade secret | = 4070 mg/kg (Rat) | | |
| Sodium azide | = 27 mg/kg (Rat) | = 20 mg/kg (Rabbit) | 0.054 - 0.52 mg/L (Rat) 4 h |
| Trade secret | = 53 mg/kg (Rat) | = 87.12 mg/kg (Rabbit) | |
| Sodium hydroxide | = 325 mg/kg (Rat) | = 1350 mg/kg (Rabbit) | |
| Hydrochloric acid | 238 - 277 mg/kg (Rat) | > 5010 mg/kg (Rabbit) | = 1.68 mg/L (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 sensitisation | May cause an allergic skin reaction. |
| 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 with long lasting effects.

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

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|------------------|----------------------|---|--|
| Trade secret | - | LC50: 5560 - 6080mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =12946mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 6020 - 7070mg/L (96h, <i>Pimephales promelas</i>) LC50: =7050mg/L (96h, <i>Pimephales promelas</i>) LC50: 6420 - 6700mg/L (96h, <i>Pimephales promelas</i>) LC50: 4747 - 7824mg/L (96h, <i>Oncorhynchus mykiss</i>) | EC50: =1000mg/L (48h, <i>Daphnia magna</i>) EC50: 340.7 - 469.2mg/L (48h, <i>Daphnia magna</i>) |
| Trade secret | - | LC50: 420 - 558mg/L (96h, <i>Pimephales promelas</i>) LC50: >100mg/L (96h, <i>Pimephales promelas</i>) | EC50: <650mg/L (48h, <i>Daphnia magna</i>) |
| Sodium azide | - | LC50: =0.8mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: =0.7mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =5.46mg/L (96h, <i>Pimephales promelas</i>) | - |
| Sodium hydroxide | - | LC50: =45.4mg/L (96h, <i>Oncorhynchus mykiss</i>) | - |

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

| Chemical name | Partition coefficient |
|---------------|-----------------------|
| Trade secret | -2.13 |
| Trade secret | 0.7 |

Mobility

Mobility in soil No information available.

PBT and vPvB assessment

| Chemical name | PBT and vPvB assessment |
|---------------|-------------------------|
|---------------|-------------------------|

| | |
|-------------------|---------------------------------|
| Trade secret | The substance is not PBT / vPvB |
| Trade secret | The substance is not PBT / vPvB |
| Sodium azide | The substance is not PBT / vPvB |
| Trade secret | The substance is not PBT / vPvB |
| Sodium hydroxide | The substance is not PBT / vPvB |
| Hydrochloric acid | The substance is not PBT / vPvB |

Other adverse effects

Other adverse effects No information available

SECTION 13: Disposal considerations

Disposal methods

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

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

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

IATA Not regulated

SECTION 15: Regulatory information

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

Singapore

Environmental Protection and Management (Hazardous Substances) Regulations

Verify that licence requirements are met.

| Chemical name | Hazardous Substances | transport |
|-------------------|--|---|
| Sodium azide | Exclusions: Air bag devices in motor vehicles | 0kg |
| Sodium hydroxide | Exclusions: 1. Substances containing <=17%, weight in weight, of Sodium hydroxide. 2. Made-up formulated preparations either liquid or solid for biochemical tests | 1000kg |
| Hydrochloric acid | Present Exclusions: Substances containing <=9%, weight in weight, of Hydrochloric acid | 1000kg all forms 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.

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 |
|-------------------|--------------------------|
| 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) (AELG(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Label elements

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P273 - Avoid release to the environment

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

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 14-Feb-2024

Revision Note Reformatted and updated existing information.

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

Disclaimer

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

End of Safety Data Sheet