# KIT SAFETY DATA SHEET



**Kit Product Name** DHFR Enzymatic Assay Module Kit

Kit Catalogue Number(s) 1665065, 1665065EDU

**Revision date** 01-Nov-2021

# **Kit Contents**

| Catalogue Number(s) | Product Name                |
|---------------------|-----------------------------|
|                     | Dihydrofolic Acid Substrate |
|                     | NADPH cofactor              |

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# SAFETY DATA SHEET

According to WHS Regulations

Revision date 01-Nov-2021 Revision Number 1

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

**Product identifier** 

Dihydrofolic Acid Substrate **Product Name** 

Catalogue Number(s)

Other means of identification

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use Laboratory chemicals

Uses advised against No information available

Details of manufacturer or importer

**Corporate Headquarters** Manufacturer **Legal Entity / Contact Address** Bio-Rad Laboratories, Life Science Group Bio-Rad Laboratories Pty Ltd

Bio-Rad Laboratories Inc. 1000 Alfred Nobel Drive 2000 Alfred Nobel Drive

Hercules, CA 94547 Hercules, California 94547 446 Victoria Road, USA Gladesville NSW 2111

Australia

Level 5

For further information, please contact

+61 2 9914 2800 or 1800 224 354 **Technical Service** 

sales.australia@bio-rad.com

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Australia: 61-290372994

Emergency telephone number No information available

### **SECTION 2: Hazards identification**

### GHS Classification

USA

| Skin corrosion/irritation                        | Category 2 - (H315) |
|--|---------------------|
| Serious eye damage/eye irritation                | Category 2 - (H319) |
| Specific target organ toxicity — single exposure | Category 3 - (H335) |

### Label elements

**Exclamation mark** 



### Signal word Warning

#### **Hazard statements**

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

#### **Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling

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

Avoid breathing dust/fume/gas/mist/vapours/spray

Use only outdoors or in a well-ventilated area

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

### **Precautionary Statements - Storage**

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

#### **Precautionary Statements - Disposal**

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

### Other hazards which do not result in classification

### SECTION 3: Composition/information on ingredients

#### Substance

| Chemical name   | CAS No    | Weight-% |
|---|-----------|----------|
| L-Glutamic acid,                                      | 4033-27-6 | 50 - 100 |
| N-[4-[[(2-amino-3,4,7,8-tetrahydro-4-oxo-6-pteridinyl |           |          |
| )methyl]amino]benzoyl]-                               |           |          |

### **SECTION 4: First aid measures**

### **Description of first aid measures**

**General advice** Show this safety data sheet to the doctor in attendance.

**Emergency telephone number** Poisons Information Centre, Australia: 13 11 26

Poisons Information Centre, New Zealand: 0800 764 766

Inhalation Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical

attention immediately if symptoms occur.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.

**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** Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Never give anything by mouth to an unconscious person. Call a doctor.

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

Most important symptoms and effects, both acute and delayed

**Symptoms** May cause redness and tearing of the eyes. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

### SECTION 5: Firefighting measures

**Suitable Extinguishing Media** 

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 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. Use personal protective equipment as required. Evacuate

personnel to safe areas. Avoid contact with skin, eyes or clothing.

**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 labelled containers.

Precautions to prevent secondary hazards

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

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

### Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with

skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Ensure adequate ventilation. Avoid breathing vapours or mists. In case of insufficient ventilation, wear suitable respiratory

equipment.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this

product. Avoid contact with skin, eyes or clothing.

### Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store according to

product and label instructions.

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

# SECTION 8: Exposure controls/personal protection

#### **Control parameters**

**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** If splashes are likely to occur, wear safety glasses with side-shields.

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

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

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are

exceeded or irritation is experienced, ventilation and evacuation may be required.

**Environmental exposure controls** No information available.

### SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Physical state Liquid
Appearance solid
Colour light yellow
Odour Odourless.

Odour threshold No information available

Revision date 01-Nov-2021

**Property Values** Remarks • Method None known pН Melting point / freezing point No data available None known No data available Boiling point / boiling range None known Flash point No data available None known **Evaporation rate** No data available None known Flammability (solid, gas) No data available None known Flammability Limit in Air None known Upper flammability or explosive No data available limits Lower flammability or explosive No data available limits No data available Vapour pressure None known No data available None known Vapour density Relative density None known No data available Water solubility slightly soluble 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 **Explosive properties** Not applicable **Oxidising properties** Not applicable Other information

Molecular weight Not applicable **VOC Content (%)** Not applicable

# **SECTION 10: Stability and reactivity**

Reactivity

Reactivity No information available.

**Chemical stability** 

Stable under normal conditions. Stability

**Explosion data** 

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

**Incompatible materials** 

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

**Hazardous decomposition products** 

Hazardous decomposition products None known based on information supplied.

### SECTION 11: Toxicological information

### **Acute toxicity**

### Information on likely routes of exposure

### **Product Information**

**Inhalation** Specific test data for the substance or mixture is not available. May cause irritation of

respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Irritating to eyes. (based on

components). Causes serious eye irritation.

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based

on components).

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

gastrointestinal irritation, nausea, vomiting and diarrhoea

**Symptoms** Redness. May cause redness and tearing of the eyes.

#### Numerical measures of toxicity - Product Information

No information available

See section 16 for terms and abbreviations

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

**Skin corrosion/irritation**Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

**Respiratory or skin sensitisation** 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** May cause respiratory irritation.

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

**Product Information** 

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

# **SECTION 12: Ecological information**

**Ecotoxicity** 

**Ecotoxicity** The environmental impact of this product has not been fully investigated.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

**Bioaccumulation**No information available.

**Mobility** 

products

Mobility in soil No information available.

**Mobility** No information available.

Other adverse effects

Other adverse effects No information available.

# SECTION 13: Disposal considerations

### Waste treatment methods

Waste from residues/unused

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**

ADG Not regulated

<u>IATA</u> Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code

No information available

### **SECTION 15: Regulatory information**

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

#### **National regulations**

#### <u>Australia</u>

See section 8 for national exposure control parameters

### Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

#### **International Inventories**

Contact supplier for inventory compliance status

### International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

### **SECTION 16: Other information**

Prepared By Bio-Rad Laboratories, Environmental Health and Safety

Revision date 01-Nov-2021

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

### 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

C Carcinogen

### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR) U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA) EPA (Environmental Protection Agency) Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)

National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme

Organisation for Economic Co-operation and Development Screening Information Data Set

RTECS (Registry of Toxic Effects of Chemical Substances)

World Health Organization

#### **Disclaimer**

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

**End of Safety Data Sheet** 



# SAFETY DATA SHEET

According to WHS Regulations

Revision date 01-Nov-2021 Revision Number 1

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

**Product identifier** 

NADPH cofactor **Product Name** 

Catalogue Number(s)

Other means of identification

**CAS No** 2646-71-1

Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use Laboratory chemicals

Uses advised against No information available

Details of manufacturer or importer

**Corporate Headquarters Manufacturer** Bio-Rad Laboratories Inc. Bio-Rad Laboratories, Life Science Group Bio-Rad Laboratories Pty Ltd 1000 Alfred Nobel Drive 2000 Alfred Nobel Drive

Hercules, CA 94547 Hercules, California 94547

USA USA **Legal Entity / Contact Address** 

Level 5

446 Victoria Road, Gladesville NSW 2111

Australia

For further information, please contact

**Technical Service** +61 2 9914 2800 or 1800 224 354

sales.australia@bio-rad.com

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Australia: 61-290372994

Emergency telephone number No information available

### **SECTION 2: Hazards identification**

### **GHS Classification**

Not classified

### Label elements

#### **Hazard statements**

Not classified

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### Other hazards which do not result in classification

## SECTION 3: Composition/information on ingredients

#### Substance

| Chemical name                            | CAS No    | Weight-% |
|--|-----------|----------|
| Dihydronicotinamide-adenine dinucleotide | 2646-71-1 | 50 - 100 |
| phosphate, tetrasodium salt              |           |          |

### **SECTION 4: First aid measures**

### **Description of first aid measures**

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

**Emergency telephone number** Poisons Information Centre, Australia: 13 11 26

Poisons Information Centre, New Zealand: 0800 764 766

**Inhalation** Remove to fresh air.

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

Consult a doctor.

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

**Ingestion** Rinse mouth thoroughly with water.

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

**Symptoms** No information available.

Indication of any immediate medical attention and special treatment needed

Note to doctors Treat symptomatically.

### SECTION 5: Firefighting measures

Suitable Extinguishing Media

surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the None known.

chemical

Special protective actions for fire-fighters

Special protective equipment for

fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

# SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** See section 8 for more information.

**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.

#### Precautions to prevent secondary hazards

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

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

#### Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

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

**Storage Conditions** Store according to product and label instructions.

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

# SECTION 8: Exposure controls/personal protection

### **Control parameters**

**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.

None known

None known

**Environmental exposure controls** No information available.

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

Information on basic physical and chemical properties

Physical state Solid

Appearance No information available

Colour yellow Odourless.

Odour threshold No information available

<u>Property</u> <u>Values</u> <u>Remarks • Method</u>

pH None known

Melting point / freezing point > 250 °C
Boiling point / boiling range 1175 °C
Flash point 664 °C

Evaporation rateNo data availableNone knownFlammability (solid, gas)No data availableNone knownFlammability Limit in AirNone known

Upper flammability or explosive No data available

limits

Lower flammability or explosive No data available

limits

Vapour pressureNo data availableNone knownVapour densityNo data availableNone knownRelative densityNo data availableNone known

Water solubility

Soluble in water

No data available

Solubility(ies)No data availableNone knownPartition coefficientNo data availableNone knownAutoignition temperatureNo data availableNone knownDecomposition temperatureNo data availableNone known

Kinematic viscosity

Dynamic viscosity

No data available

No data available

Explosive properties Not applicable Oxidising properties Not applicable

Other information

Molecular weight Not applicable VOC Content (%) Not applicable

# **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

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**

### **Acute toxicity**

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** No information available.

#### Numerical measures of toxicity - Product Information

No information available

See section 16 for terms and abbreviations

#### 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.

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

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

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

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

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.

**Product Information** 

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

### SECTION 12: Ecological information

**Ecotoxicity** 

**Ecotoxicity** The environmental impact of this product has not been fully investigated.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

**Bioaccumulation** No information available.

**Mobility** 

products

Mobility in soil No information available.

**Mobility** No information available.

Other adverse effects

Other adverse effects No information available.

# SECTION 13: Disposal considerations

### Waste treatment methods

Waste from residues/unused

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**

ADG Not regulated

IATA Not regulated

**IMDG** Not regulated

### Transport in bulk according to Annex II of MARPOL and the IBC Code

No information available

# **SECTION 15: Regulatory information**

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

### **National regulations**

### Australia

See section 8 for national exposure control parameters

### Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

No poisons schedule number allocated

### International Inventories

Contact supplier for inventory compliance status

#### International Regulations

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### **SECTION 16: Other information**

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Revision date 01-Nov-2021

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TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

Ceiling Maximum limit value \* Skin designation

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**End of Safety Data Sheet**