

# 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              |



# SAFETY DATA SHEET

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

Revision date 01-Nov-2021

Revision Number 1

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

### Product identifier

**Product Name** Dihydrofolic Acid Substrate

### Other means of identification

**Catalogue Number(s)** --

**Pure substance/mixture** Substance

Contains L-Glutamic acid, N-[4-[[[(2-amino-3,4,7,8-tetrahydro-4-oxo-6-pteridiny)]methyl]amino]benzoyl]-

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

**Recommended use** Laboratory chemicals

**Uses advised against** No information available

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

#### Corporate Headquarters

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

#### Manufacturer

Bio-Rad Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
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 corrosion/irritation                        | Category 2 |
| Serious eye damage/eye irritation                | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |

### Label elements



**Signal word**

Warning

**Hazard statements**

H315 - Causes skin irritation

H335 - May cause respiratory irritation

H319 - Causes serious eye irritation

**Precautionary Statements - Prevention**

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

Wash face, hands and any exposed skin thoroughly after handling

Use only outdoors or in a well-ventilated area

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

**Precautionary Statements - Response**

If skin irritation 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

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

Call a POISON CENTRE or doctor if you feel unwell

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**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**

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

**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. 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**

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

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

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

**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** 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 labeled containers.

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

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

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

**Precautions for safe handling**

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing

vapors 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.

### **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** 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**

|                        |                          |
|------------------------|--------------------------|
| <b>Physical state</b>  | Liquid                   |
| <b>Appearance</b>      | solid                    |
| <b>Colour</b>          | light yellow             |
| <b>Odour</b>           | Odourless.               |
| <b>Odour threshold</b> | No information available |

| <b><u>Property</u></b>                        | <b><u>Values</u></b> | <b><u>Remarks • Method</u></b> |
|---|----------------------|--------------------------------|
| <b>pH</b>                                     | No data available    | None known                     |
| <b>Melting point / freezing point</b>         | No data available    | None known                     |
| <b>Boiling point / boiling range</b>          | No data available    | None known                     |
| <b>Flash point</b>                            | No data available    | None known                     |
| <b>Evaporation rate</b>                       | No data available    | None known                     |
| <b>Flammability (solid, gas)</b>              | No data available    | None known                     |
| <b>Flammability Limit in Air</b>              | No data available    | None known                     |
| <b>Upper flammability or explosive limits</b> | No data available    |                                |
| <b>Lower flammability or explosive limits</b> | No data available    |                                |
| <b>Vapour pressure</b>                        | No data available    | None known                     |

|                           |                   |            |
|---------------------------|-------------------|------------|
| Vapour density            | No data available | None known |
| Relative density          | No data available | None known |
| 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 |

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 Strong acids. Strong bases. Strong oxidizing agents.

### 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. May cause irritation of respiratory tract.  |
| Eye contact  | Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain. |
| 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 diarrhea.             |

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

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

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

No information available

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

|  |  |
|--|--|
| <b>Skin corrosion/irritation</b>         | Classification based on data available for ingredients. Irritating to skin.            |
| <b>Serious eye damage/eye irritation</b> | Classification based on data available for ingredients. Causes serious eye irritation. |
| <b>Respiratory or skin sensitization</b> | Based on available data, the classification criteria are not met.                      |
| <b>Germ cell mutagenicity</b>            | Based on available data, the classification criteria are not met.                      |
| <b>Carcinogenicity</b>                   | Based on available data, the classification criteria are not met.                      |
| <b>Reproductive toxicity</b>             | Based on available data, the classification criteria are not met.                      |
| <b>STOT - single exposure</b>            | May cause respiratory irritation.  |
| <b>STOT - repeated exposure</b>          | Based on available data, the classification criteria are not met.                      |
| <b>Aspiration hazard</b>                 | Classification not possible.   |

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

|                    |   |
|--------------------|---|
| <b>Ecotoxicity</b> | The environmental impact of this product has not been fully investigated. |
|--------------------|---|

**Persistence and degradability**

|                                      |                           |
|--------------------------------------|---------------------------|
| <b>Persistence and degradability</b> | No information available. |
|--------------------------------------|---------------------------|

**Bioaccumulative potential**

|                        |                           |
|------------------------|---------------------------|
| <b>Bioaccumulation</b> | No information available. |
|------------------------|---------------------------|

**Mobility**

|                                |                           |
|--------------------------------|---------------------------|
| <b>Mobility in soil</b>        | No information available. |
| <b>PBT and vPvB assessment</b> | No information available  |

**Other adverse effects**

|                              |                          |
|------------------------------|--------------------------|
| <b>Other adverse effects</b> | No information available |
|------------------------------|--------------------------|

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

|                                   |  |
|-----------------------------------|--|
| <b>Waste from residues/unused</b> | Dispose of in accordance with local regulations. Dispose of waste in accordance with |
|-----------------------------------|--|

|                        |                                |
|------------------------|--------------------------------|
| products               | 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**

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P312 - Call a POISON CENTER or doctor if you feel unwell  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

|                      |  |
|----------------------|--|
| <b>Issuing Date</b>  | Bio-Rad Laboratories, Environmental Health and Safety    |
| <b>Revision date</b> | 01-Nov-2021  |
| <b>Revision Note</b> | 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-Nov-2021

Revision Number 1

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

### Product identifier

Product Name NADPH cofactor

### Other means of identification

Catalogue Number(s) --

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 the supplier of the safety data sheet

#### Corporate Headquarters

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

#### Manufacturer

Bio-Rad Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
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****CAS No** 2646-71-1

| Chemical name  | EC No     | CAS No    | Weight-% |
|--|-----------|-----------|----------|
| Dihydronicotinamide-adenine dinucleotide phosphate, tetrasodium salt | 220-163-3 | 2646-71-1 | 50 - 100 |

**SECTION 4: First aid measures****Description of first aid measures**

|                       |  |
|-----------------------|--|
| <b>General advice</b> | No hazards which require special first aid measures.   |
| <b>Inhalation</b>     | Remove to fresh air.   |
| <b>Eye contact</b>    | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| <b>Skin contact</b>   | Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.                 |
| <b>Ingestion</b>      | 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

|                        |                          |
|------------------------|--------------------------|
| <b>Physical state</b>  | Solid                    |
| <b>Appearance</b>      | No information available |
| <b>Colour</b>          | yellow                   |
| <b>Odour</b>           | Odourless.               |
| <b>Odour threshold</b> | No information available |

| <b>Property</b>                               | <b>Values</b>            | <b>Remarks • Method</b> |
|---|--------------------------|-------------------------|
| <b>pH</b>                                     |                          | None known              |
| <b>Melting point / freezing point</b>         | > 250 °C                 |                         |
| <b>Boiling point / boiling range</b>          | 1175 °C                  |                         |
| <b>Flash point</b>                            | 664 °C                   |                         |
| <b>Evaporation rate</b>                       | No data available        | None known              |
| <b>Flammability (solid, gas)</b>              | No data available        | None known              |
| <b>Flammability Limit in Air</b>              |                          | None known              |
| <b>Upper flammability or explosive limits</b> | No data available        |                         |
| <b>Lower flammability or explosive limits</b> | No data available        |                         |
| <b>Vapour pressure</b>                        | No data available        | None known              |
| <b>Vapour density</b>                         | No data available        | None known              |
| <b>Relative density</b>                       | No data available        | None known              |
| <b>Water solubility</b>                       | Soluble in water         |                         |
| <b>Solubility(ies)</b>                        | No data available        | None known              |
| <b>Partition coefficient</b>                  | No data available        | None known              |
| <b>Autoignition temperature</b>               | No data available        | None known              |
| <b>Decomposition temperature</b>              |                          | None known              |
| <b>Kinematic viscosity</b>                    | No data available        | None known              |
| <b>Dynamic viscosity</b>                      | No data available        | None known              |
| <b>Other information</b>                      | No information available |                         |

## SECTION 10: Stability and reactivity

### Reactivity

**Reactivity** No information available.

### Chemical stability

**Stability** Stable under normal conditions.

### Explosion data

**Sensitivity to mechanical impact** None.  
    **Sensitivity to static discharge** None.

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

### Conditions to avoid

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

### Incompatible materials

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

### Hazardous decomposition products

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

**SECTION 11: Toxicological information****Information on likely routes of exposure****Product Information**

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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**

No information available

**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 | 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**

**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) (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**

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**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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**End of Safety Data Sheet**