



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
REACH Regulation (EC) No 1907/2006, as retained in UK law by (SI 2019/758 as amended)

Revision date 10-Apr-2025

Version 4

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

### 1.1. Product identifier

Product name PhiX174 RF II DNA

Product No N3022

Pure substance/mixture Mixture

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use This product is for research and development only

Uses advised against No information available

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

#### **Supplier**

New England BioLabs  
240 County Road  
Ipswich, MA 01938  
USA

For further information, please contact

Contact Point 978-927-5054, 800-632-5227 (toll free)

E-mail address info@neb.com

### 1.4. Emergency telephone number

Emergency Telephone Chemtrec +44 20 3885 0382

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**GB CLP (SI 2020/1567 as amended)**

Not classified

### 2.2. Label elements

Not classified

#### **Hazard statements**

Not classified.

**2.3. Other hazards****Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

Not applicable

**3.2 Mixtures**

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

**Full text of H- and EUH-phrases: see section 16**

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (UK REACH Article 59)

**SECTION 4: First aid measures****4.1. Description of 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.<br>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.                                                                                                            |

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

|                     |                           |
|---------------------|---------------------------|
| Symptoms            | No information available. |
| Effects of Exposure | No information available. |

**4.3. Indication of any immediate medical attention and special treatment needed**

|                    |                        |
|--------------------|------------------------|
| Note to physicians | Treat symptomatically. |
|--------------------|------------------------|

**SECTION 5: Firefighting measures****5.1. Extinguishing media**

|                                |                                                                                                         |
|--------------------------------|---------------------------------------------------------------------------------------------------------|
| Suitable Extinguishing Media   | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Large Fire                     | CAUTION: Use of water spray when fighting fire may be inefficient.                                      |
| Unsuitable extinguishing media | Do not scatter spilled material with high pressure water streams.                                       |

**5.2. Special hazards arising from the substance or mixture**

Specific hazards arising from the chemical      No information available.

**5.3. Advice for firefighters**

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****6.1. Personal precautions, protective equipment and emergency procedures**

Personal precautions      Ensure adequate ventilation.

For emergency responders      Use personal protection recommended in Section 8.

**6.2. Environmental precautions**

Environmental precautions      See Section 12 for additional Ecological Information.

**6.3. 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      Take up mechanically, placing in appropriate containers for disposal.

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

**6.4. Reference to other sections**

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

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

Advice on safe handling      Ensure adequate ventilation.

General hygiene considerations      Wash hands before breaks and immediately after handling the product.

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

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

**7.3. Specific end use(s)**

Risk management methods [RMM]      The information required is contained in this Safety Data Sheet.

**SECTION 8: Exposure controls/personal protection****8.1. 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.

**Derived No Effect Level (DNEL) - Workers**

| Chemical name                               | Oral | Dermal                     | Inhalation                                                   |
|---------------------------------------------|------|----------------------------|--------------------------------------------------------------|
| Tris-HCl<br>1185-53-1                       |      | 216.6 mg/kg bw/day [4] [6] | 152.8 mg/m <sup>3</sup> [4] [6]                              |
| Ethylenediamine tetraacetic acid<br>60-00-4 |      |                            | 1.5 mg/m <sup>3</sup> [5] [6]<br>3 mg/m <sup>3</sup> [5] [7] |

**Notes**

- [4] Systemic health effects.  
 [5] Local health effects.  
 [6] Long term.  
 [7] Short term.

**Derived No Effect Level (DNEL) - General Public**

| Chemical name                               | Oral                      | Dermal | Inhalation                                                     |
|---------------------------------------------|---------------------------|--------|----------------------------------------------------------------|
| Tris-HCl<br>1185-53-1                       | 10.8 mg/kg bw/day [4] [6] |        | 37.7 mg/m <sup>3</sup> [4] [6]                                 |
| Ethylenediamine tetraacetic acid<br>60-00-4 | 25 mg/kg bw/day [4] [6]   |        | 0.6 mg/m <sup>3</sup> [5] [6]<br>1.2 mg/m <sup>3</sup> [5] [7] |

**Notes**

- [4] Systemic health effects.  
 [5] Local health effects.  
 [6] Long term.  
 [7] Short term.

**Predicted No Effect Concentration (PNEC)**

| Chemical name                               | Freshwater | Freshwater<br>(intermittent release) | Marine water | Marine water<br>(intermittent release) | Air |
|---------------------------------------------|------------|--------------------------------------|--------------|----------------------------------------|-----|
| Ethylenediamine tetraacetic acid<br>60-00-4 | 2.2 mg/L   | 1.2 mg/L                             | 0.22 mg/L    |                                        |     |

| Chemical name                               | Freshwater<br>sediment | Marine sediment | Sewage treatment | Soil               | Food chain |
|---------------------------------------------|------------------------|-----------------|------------------|--------------------|------------|
| Ethylenediamine tetraacetic acid<br>60-00-4 |                        |                 | 43 mg/L          | 0.72 mg/kg soil dw |            |

**8.2. Exposure controls**

|                                                                              |                                                                                                                                                                          |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Engineering controls                                                         | No information available.                                                                                                                                                |
| <u>Individual protection measures, such as personal protective equipment</u> |                                                                                                                                                                          |
| Eye/face protection                                                          | No special protective equipment required.                                                                                                                                |
| Skin and body protection                                                     | No special protective equipment required.                                                                                                                                |
| 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. |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                |                          |
|----------------|--------------------------|
| Physical state | Liquid                   |
| Appearance     | Colorless                |
| Color          | No information available |
| Odor           | Mild.                    |
| Odor threshold | No information available |

| <u>Property</u>                         | <u>Values</u>            | <u>Remarks • Method</u> |
|-----------------------------------------|--------------------------|-------------------------|
| Melting point / freezing point          | No data available        | None known              |
| Initial boiling point and boiling range | 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        |                         |
| Flash point                             | No data available        | None known              |
| Autoignition temperature                | 200 °C                   |                         |
| Decomposition temperature               |                          | None known              |
| pH                                      | No data available        | None known              |
| pH (as aqueous solution)                | No data available        | None known              |
| Kinematic viscosity                     | No data available        | None known              |
| Dynamic viscosity                       | No data available        | None known              |
| Water solubility                        | No data available        | None known              |
| Solubility(ies)                         | No data available        | None known              |
| Partition coefficient                   | No data available        | None known              |
| Vapor pressure                          | No data available        | None known              |
| Relative density                        | No data available        | None known              |
| Bulk density                            | No data available        |                         |
| Liquid Density                          | No data available        |                         |
| Vapor density                           | No data available        | None known              |
| Particle characteristics                |                          |                         |
| Particle Size                           | No information available |                         |
| Particle Size Distribution              | No information available |                         |
| Explosive properties                    | No information available |                         |
| Oxidizing properties                    | No information available |                         |

### 9.2. Other information

**SECTION 10: Stability and reactivity****10.1. Reactivity**

**Reactivity** No information available.

**10.2. Chemical stability**

**Stability** Stable under normal conditions.

**Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

**10.3. Possibility of hazardous reactions**

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

**10.4. Conditions to avoid**

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

**10.5. Incompatible materials**

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

**10.6. Hazardous decomposition products**

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

**SECTION 11: Toxicological information****11.1. 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** No information available.

**Numerical measures of toxicity**

The following ATE values have been calculated for the mixture

|                               |           |       |
|-------------------------------|-----------|-------|
| ATEmix (oral)                 | 99,999.00 | mg/kg |
| ATEmix (dermal)               | 99,999.00 | mg/kg |
| ATEmix (inhalation-gas)       | 99,999.00 | ppm   |
| ATEmix (inhalation-vapor)     | 99,999.00 | mg/l  |
| ATEmix (inhalation-dust/mist) | 99,999.00 | mg/l  |

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

|                                   |                           |
|-----------------------------------|---------------------------|
| Skin corrosion/irritation         | No information available. |
| Serious eye damage/eye irritation | No information available. |
| Respiratory or skin sensitization | No information available. |
| Germ cell mutagenicity            | No information available. |
| Carcinogenicity                   | No information available. |
| Reproductive toxicity             | No information available. |
| STOT - single exposure            | No information available. |
| STOT - repeated exposure          | No information available. |
| Aspiration hazard                 | No information available. |
| Other adverse effects             | No information available. |

## SECTION 12: Ecological information

### 12.1. Toxicity Ecotoxicity

### 12.2. Persistence and degradability

Persistence and degradability No information available.

### 12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

### 12.4. Mobility in soil

Mobility in soil No information available.

### 12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB above the threshold of declaration.

### 12.6. Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### 13.1. 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

### IATA

|                                   |                |
|-----------------------------------|----------------|
| 14.1 UN number or ID number       | Not regulated  |
| 14.2                              |                |
| 14.3 Transport hazard class(es)   | Not regulated  |
| 14.4 Packing group                | Not regulated  |
| 14.5 Environmental hazard         | Not applicable |
| 14.6 Special precautions for user |                |
| Special Provisions                | None           |

### IMDG

|                                                              |                          |
|--------------------------------------------------------------|--------------------------|
| 14.1 UN number or ID number                                  | Not regulated            |
| 14.2                                                         |                          |
| 14.3 Transport hazard class(es)                              | Not regulated            |
| 14.4 Packing group                                           | Not regulated            |
| 14.5 Environmental hazard                                    | Not applicable           |
| 14.6 Special precautions for user                            |                          |
| Special Provisions                                           | None                     |
| 14.7 Maritime transport in bulk according to IMO instruments | No information available |

### RID

|                                   |                |
|-----------------------------------|----------------|
| 14.1 UN number or ID number       | Not regulated  |
| 14.2                              |                |
| 14.3 Transport hazard class(es)   | Not regulated  |
| 14.4 Packing group                | Not regulated  |
| 14.5 Environmental hazard         | Not applicable |
| 14.6 Special precautions for user |                |
| Special Provisions                | None           |

### ADR

|                                   |                |
|-----------------------------------|----------------|
| 14.1 UN number or ID number       | Not regulated  |
| 14.2                              |                |
| 14.3 Transport hazard class(es)   | Not regulated  |
| 14.4 Packing group                | Not regulated  |
| 14.5 Environmental hazard         | Not applicable |
| 14.6 Special precautions for user |                |
| Special Provisions                | None           |

## SECTION 15: Regulatory information

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

#### Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (UK REACH - Annex XIV). This product does not contain substances subject to restriction (UK REACH - Annex XVII).

#### **Persistent Organic Pollutants**

Not applicable

#### **Export Notification requirements**

Not applicable

#### **Named dangerous substances per COMAH (SI 2015/483 as amended)**

Not applicable

**The Ozone-Depleting Substances Regulations 2015**

Not applicable

**The Biocidal Products Regulations 2001 (as amended)**

Not applicable

**The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)**

Not applicable

**Poisons and Explosive Precursors**

Not applicable

**International Inventories**

|                      |                                                  |
|----------------------|--------------------------------------------------|
| <b>TSCA</b>          | Contact supplier for inventory compliance status |
| <b>DSL/NDL</b>       | Contact supplier for inventory compliance status |
| <b>EINECS/ELINCS</b> | Contact supplier for inventory compliance status |
| <b>ENCS</b>          | Contact supplier for inventory compliance status |
| <b>IECSC</b>         | Contact supplier for inventory compliance status |
| <b>KECL</b>          | Contact supplier for inventory compliance status |
| <b>PICCS</b>         | Contact supplier for inventory compliance status |
| <b>AIIC</b>          | Contact supplier for inventory compliance status |
| <b>NZIoC</b>         | Contact supplier for inventory compliance status |
| <b>TCSI</b>          | Contact supplier for inventory compliance status |

**Legend:**

|                      |                                                                                                    |
|----------------------|----------------------------------------------------------------------------------------------------|
| <b>TSCA</b>          | - United States Toxic Substances Control Act Section 8(b) Inventory                                |
| <b>DSL/NDL</b>       | - Canadian Domestic Substances List/Non-Domestic Substances List                                   |
| <b>EINECS/ELINCS</b> | - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances |
| <b>ENCS</b>          | - Japan Existing and New Chemical Substances                                                       |
| <b>IECSC</b>         | - China Inventory of Existing Chemical Substances                                                  |
| <b>KECL</b>          | - Korean Existing Chemicals Inventory                                                              |
| <b>PICCS</b>         | - Philippines Inventory of Chemicals and Chemical Substances                                       |
| <b>AICS</b>          | - Australian Inventory of Chemical Substances                                                      |
| <b>NZIoC</b>         | - New Zealand Inventory of Chemicals                                                               |
| <b>TCSI</b>          | - Taiwan Chemical Substance Inventory                                                              |

**15.2. Chemical safety assessment**

**Chemical Safety Report** No information available

**SECTION 16: Other information**

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**Legend**

SVHC: Substances of Very High Concern for Authorization:  
 PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances  
 vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances  
 STOT: Specific Target Organ Toxicity  
 ATE: Acute Toxicity Estimate  
 LC50: 50% Lethal Concentration  
 LD50: 50% Lethal Dose

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

|         |                             |      |                                  |
|---------|-----------------------------|------|----------------------------------|
| TWA     | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value         | Sk*  | Skin designation                 |
| +       | Sensitizers                 |      |                                  |

**Classification procedure**

| Classification according to GB CLP (SI 2020/1567 as amended) | Method Used        |
|--------------------------------------------------------------|--------------------|
| Acute oral toxicity                                          | Calculation method |
| Acute dermal toxicity                                        | Calculation method |
| Acute inhalation toxicity - gas                              | Calculation method |
| Acute inhalation toxicity - vapor                            | Calculation method |
| Acute inhalation toxicity - dust/mist                        | Calculation method |
| Skin corrosion/irritation                                    | Calculation method |
| Serious eye damage/eye irritation                            | Calculation method |
| Respiratory sensitization                                    | Calculation method |
| Skin sensitization                                           | Calculation method |
| Mutagenicity                                                 | Calculation method |
| Carcinogenicity                                              | Calculation method |
| Reproductive toxicity                                        | Calculation method |
| STOT - single exposure                                       | Calculation method |
| STOT - repeated exposure                                     | Calculation method |
| Acute aquatic toxicity                                       | Calculation method |
| Chronic aquatic toxicity                                     | Calculation method |
| Aspiration hazard                                            | Calculation method |
| Ozone                                                        | Calculation method |

**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)  
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
 European Chemicals Agency (ECHA) (ECHA\_API)  
 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)  
 National Institute of Technology and Evaluation (NITE)  
 Australia 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)  
 U.S. National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 World Health Organization

**Revision date** 10-Apr-2025

**Further information** SDS is valid 3 years from revision date. Contact info@neb.com for latest revision

**This SDS complies with the requirements of UK REACH Regulations SI 2019/758 (as amended)**

**Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge and belief at the date of publication. This information is intended only as a guide for safe handling, use, processing, storage, transportation, disposal and release and should not be taken as a warranty or quality specification. The information relates only to the specific material and may not be valid for such material used in combination with any other materials or in any process unless expressly specified in the text. New England Biolabs will not be liable for any damages resulting from handling or contact with the product.

**End of Safety Data Sheet**