## SECTION 1: Identification

**1.1 Product identifier**

Product name: Phu-50 High Fidelity Polymerase

**1.2 Other means of identification**

Item number: Phu-50

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

Laboratory Chemicals

**1.4 Supplier's details**

Name: Empirical Bioscience
Address: 4635 40th Street SE
Grand Rapids, MI 49508
USA
Telephone: 1-877.479.9949
Email: empirical-customer.service@fortislife.com

**1.5 Emergency phone number(s)**

1-877.479.9949

## SECTION 2: Hazard identification

**2.1 Classification of the substance or mixture**

**GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200) and Regulation (EC) No 1272/2008 [CLP]**

Not a hazardous substance or mixture.

**2.2 GHS label elements, including precautionary statements**

Not a hazardous substance or mixture.

**2.3 Hazards not otherwise classified (HNOC)**

No data available.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## SECTION 3: Composition/information on ingredients

**3.1 Substances**

Not applicable.

**3.2 Mixtures**

| Component | Concentration |
|---|---|
| **Glycerol (CAS no.: 56-81-5; EC no.: 200-289-5)** | **50 %** |

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

| | |
|---|---|
| If inhaled | Remove to fresh air and promote deep breathing. Get medical attention if effects persist. |
| In case of skin contact | Wash with plenty of soap and water. Get medical attention if irritation develops or persists. |
| In case of eye contact | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical attention |
| If swallowed | Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. |

### 4.2 Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary
Treat symptomatically and supportively.

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Specific hazards arising from the chemical
No data available.

### 5.3 Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

**Further information**
No data available.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures
Wear personal protection recommended in Section 8. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

### 6.2 Environmental precautions
Avoid release to the environment. Do not allow to enter sewers/ surface or ground water.

### 6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material. Pick up and keep in suitable, closed containers for disposal.

**Reference to other sections**
For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practices. Wash hands with soap and water after handling.

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

Keep container tightly closed in a dry, cool and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Specific end use(s)**

Apart from the uses mentioned in section 1 no other specific uses are stipulated.

## SECTION 8: Exposure controls/personal protection

**8.1 Control parameters**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**Glycerol (CAS no.: 56-81-5)**
PEL-TWA: 15 mg/m³ (total dust), 5 mg/m³ (respirable) (OSHA)
PEL-TWA: 10 mg/m³ (total dust), 5 mg/m³ (respirable fraction) (Cal/OSHA)

**8.2 Appropriate engineering controls**

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

**8.3 Individual protection measures, such as personal protective equipment (PPE)**

**Pictograms**



**Eye/face protection**
Safety glasses are recommended.

**Skin protection**
Wear protective gloves, such as nitrile gloves.

**Body protection**
The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Provide good ventilation. Respiratory protection is not required under normal use conditions. If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator with organic vapor/acid gas cartridge and particulate filter, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

**Thermal hazards**
No data available.

**Environmental exposure controls**
Avoid release to the environment. Do not allow to enter sewers/ surface or ground water.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

| | |
|---|---|
| Appearance/form (physical state, color, etc.) | Colorless liquid |
| Odor | Characteristic |
| Odor threshold | No data available. |
| pH | 7.4 |
| Melting point/freezing point | No data available. |
| Initial boiling point and boiling range | 100 °C (212 °F) |
| Flash point | Not flammable. |
| Evaporation rate | No data available. |
| Flammability (solid, gas) | Not applicable. |
| Upper/lower flammability limits | No data available. |
| Upper/lower explosive limits | Lower: 0.9% |
| Vapor pressure | 0.1 hPa |
| Vapor density | No data available. |
| Relative density | No data available. |
| Density | 1.152 g/cm³ (9.613 lbs/gal) |
| Solubility(ies) | Fully miscible in water. |
| Partition coefficient: n-octanol/water | No data available. |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | No data available. |
| Viscosity | No data available. |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |
| Organic Solvents | 50% |
| Water | 48.1% |
| Solids content | 1.4% |

### Other safety information
No data available.

## SECTION 10: Stability and reactivity

**10.1 Reactivity**
Non-reactive under normal use conditions.

**10.2 Chemical stability**
Stable under normal storage conditions.

**10.3 Possibility of hazardous reactions**
No data available.

**10.4 Conditions to avoid**
No data available.

**10.5 Incompatible materials**
Strong oxidizers, strong acids, strong bases, reactive metals.

**10.6 Hazardous decomposition products**
No data available.

## SECTION 11: Toxicological information

### Information on toxicological effects

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation.

**Acute toxicity**
Based on available data, classification data are not met.

Components:

Glycerol (CAS no.: 56-81-5)
LD50 (oral) – rat - 12600 mg/kg
LD50 (skin) – rabbit – > 10000 mg/kg
LC50 (inhalation) – rat – > 570mg/$m^3$/1H

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

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

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

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

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

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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

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

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

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

## SECTION 12: Ecological information

**Toxicity**
No data available on product

**Persistence and degradability**
No data available on product

**Bioaccumulative potential**
No data available on product

**Mobility in soil**
No data available on product.

**Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**Other adverse effects**
No ecological problems are to be expected when the product is handled and used with due care and attention. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## SECTION 13: Disposal considerations

**Disposal of the product**
Disposal should be in accordance with applicable Federal, State and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

**Disposal of contaminated packaging**
Dispose of as unused product.

## SECTION 14: Transport information

**14.1 UN-Number**
Not applicable

**14.2 UN proper shipping name**
Not applicable

**14.3 Transport hazard class(es)**
Not applicable

**14.4 Packing group**
Not applicable

**14.5 Environmental hazards**
No data available.

**14.6 Special precautions for use**
No data available.

**14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code**
Not applicable.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

**California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**SARA 302 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 311/312 Hazards**
No SARA hazards.

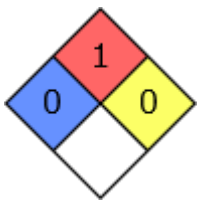
**SARA 313 Components**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**TSCA (Toxic Substances Control Act)**
All of the ingredients are listed.

**HMIS Rating**

| Phu-50 High Fidelity Polymerase | |
|---|---|
| HEALTH | 0 |
| FLAMMABILITY | 1 |
| PHYSICAL HAZARD | 0 |
| PERSONAL PROTECTION | |

**NFPA Rating**




## SECTION 16: Other information

### 16.1 Further information/disclaimer

Date of issue: February 24, 2023.

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