SECTION 1: Identification

1.1 Product identifier

Product name 10X Phu-50 Reaction Buffer

1.2 Other means of identification

Item number: Phu-RB

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 49512
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
Dimethyl Sulfoxide (CAS no.: 67-68-5; EC no.: 200-664-3)	**<5 %**
Triton X-100 (CAS no.: 9002-93-1; EC no.: 618-344-0)	**1 %**
Potassium chloride (CAS no.: 7447-40-7)	**3.7 %**
Tris HCl buffer (CAS no.: 1185−53−1)	**3.2 %**

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
Hazardous decomposition products formed under fire conditions: Carbon oxides, Sulphur oxides.

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. Avoid prolonged exposure. Avoid contact with skin, eyes and clothing. 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. Recommended storage temperate is -20ºC.

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. 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	No data available.
Melting point/freezing point	No data available.
Initial boiling point and boiling range	No data available.
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	No data available.
Vapor pressure	No data available.
Vapor density	No data available.
Relative density	No data available.
Density	No data available.
Solubility(ies)	Fully miscible with 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	0%
Water	No data available.
Solids content	No data available.

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
Hazardous decomposition products formed under fire conditions: Carbon oxides, Sulphur oxides.

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. Overexposure may cause skin irritation.

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

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.

Additional information
Prolonged exposure may cause redness of skin, Itching, burning, sedation, headache, nausea, dizziness.

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.

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.

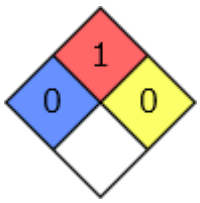
SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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

HMIS Rating

10X Phu-50 Reaction Buffer	
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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