

## SAFETY DATA SHEET

# Frag/AT Enzyme Mix

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

*Trade name:* Frag/AT Enzyme Mix  
*Product no.:* Z0006

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

*Relevant identified uses of the substance or mixture:* Laboratory use  
Restricted to professional users.  
*Uses advised against :* in vivo

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

*Company and address:* **Watchmaker Genomics, Inc.**  
5744 Central Ave, Ste 100  
CO 80301 Boulder  
USA  
T: +1 720-543-2174  
*E-mail:* info@watchmakergenomics.com  
*Revision:* 23/04/2024  
*SDS Version:* 1.0

### 1.4. Emergency telephone number

In urgent situations: Call 112 and request the poison information centre. (24h service)  
Giftnotrufzentrale Berlin, Emergency telephone: +49 30 19240 (day and night)  
See also section 4 for first aid measures.

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

Not classified according to Regulation (EC) No. 1272/2008 (CLP).

### 2.2. Label elements

*Hazard pictogram(s):* Not applicable.  
*Signal word:* Not applicable.  
*Hazard statement(s):* Not applicable.  
*Precautionary statement(s):*  
*General:* -  
*Prevention:* -  
*Response:* -  
*Storage:* -

*Disposal:*

-

*Hazardous substances:*

None known.

*Additional labelling:*

Not applicable.

### 2.3. Other hazards

*Additional warnings:*

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Not applicable. This product is a mixture.

### 3.2. Mixtures

| Product/substance | Identifiers   | % w/w  | Classification | Note |
|-------------------|---|--------|----------------|------|
| Glycerol          | CAS No.: 56-81-5<br>EC No.: 200-289-5<br>REACH: 01-2119471987-18-XXXX<br>Index No.: | 40-60% |                |      |

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

### Other information

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## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

*General information:*

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

*Inhalation:*

In case of discomfort: bring the person into fresh air.

*Skin contact:*

Upon irritation: rinse with water. In the event of continued irritation, seek medical assistance.

*Eye contact:*

If in eyes: Flush eyes with plenty of water or salt water (20-30 °C) and continue until irritation stops. Remove

|                   |   |
|-------------------|---|
| <i>Ingestion:</i> | contact lenses.<br>Rinse and flush mouth thoroughly and consume large quantities of water. In case of continued discomfort: seek medical assistance and bring this safety data sheet. |
| <i>Burns:</i>     | Not applicable.   |

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

None known.

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

Treat symptomatically.

**Information to medics**

Bring this safety data sheet or the label from this product.

**SECTION 5: FIREFIGHTING MEASURES****5.1. Extinguishing media**

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.  
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

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

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Carbon oxides (CO / CO<sub>2</sub>)

**5.3. Advice for firefighters**

Fire fighters should wear appropriate personal protective equipment.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation, especially in confined areas.  
Contaminated areas may be slippery.

**6.2. Environmental precautions**

Avoid discharge to lakes, streams, sewers, etc.  
Keep unauthorized persons away from the spill

**6.3. Methods and material for containment and cleaning up**

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

**6.4. Reference to other sections**

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

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

Joint storage is permitted for products in storage classes: 2A, 2B, 3, 4.1B, 4.2, 5.1A, 5.1B, 5.2, 6.1A, 6.1B, 6.1C, 6.1D, 8A, 8B, 10, 11, 12, 13

Restrictions apply to joint storage of products in storage classes: 4.1A, 4.3, 5.1C

Joint storage is NOT allowed for products in all other storage classes.

*Recommended storage material:*

Keep only in original packaging.

*Storage class:*

Storage class 12 (Non-combustible liquids).

TRGS 510 - Storage of hazardous substances in non-stationary containers.

*Storage temperature:*

-25 °C to -15 °C

*Incompatible materials:*

No specific requirements

### 7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Glycerol

Long term exposure limit (8 hours) (mg/m<sup>3</sup>): 200 (Einatembare Fraktion)

Short term exposure limit (15 minutes) (mg/m<sup>3</sup>): 400 (Einatembare Fraktion)

Category for short-term values: I

Annotations:

DFG = Senate Commission for the examination of Harmful working materials of the DFG (MAK Commission)

Y = No risk of fetal damage is to be feared if the occupational exposure limit (OEL) value and the biological limit value (BLV) are adhered to.

Technical requirements for hazardous substances, workplace exposure limits, TRGS 900 (Jan. 2006)

#### DNEL

Glycerol

| Duration:                           | Route of exposure: | DNEL:                 |
|-------------------------------------|--------------------|-----------------------|
| Long term – Local effects - Workers | Inhalation         | 220 mg/m <sup>3</sup> |

#### PNEC

Glycerol

| Route of exposure: | Duration of Exposure: | PNEC: |
|--------------------|-----------------------|-------|
|--------------------|-----------------------|-------|

|                        |  |       |
|------------------------|--|-------|
| Sewage treatment plant |  | 1 g/L |
|------------------------|--|-------|

## 8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

|  |   |
|--|---|
| <i>General recommendations:</i>                  | When handling chemical products, do not eat, drink or smoke.  |
| <i>Exposure scenarios:</i>                       | There are no exposure scenarios implemented for this product.   |
| <i>Exposure limits:</i>                          | Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.  |
| <i>Appropriate technical measures:</i>           | The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked. Apply standard precautions during use of the product. Avoid inhalation of vapours. |
| <i>Hygiene measures:</i>                         | Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse.   |
| <i>Measures to avoid environmental exposure:</i> | No specific requirements.   |

## Individual protection measures, such as personal protective equipment

|                               |  |
|-------------------------------|--|
| <i>Generally:</i>             | Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).  |
| <i>Respiratory Equipment:</i> | If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.   |
| <i>Skin protection:</i>       | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent). Appropriate techniques should be used to remove used gloves and contaminated clothing. |
| <i>Hand protection:</i>       | Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves.   |
| <i>Eye protection:</i>        | Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).  |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

## 9.1. Information on basic physical and chemical properties

|                                    |                   |
|------------------------------------|-------------------|
| <i>Physical state:</i>             | Liquid            |
| <i>Colour:</i>                     | Clear             |
| <i>Odour / Odour threshold:</i>    | None              |
| <i>pH:</i>                         | No data available |
| <i>Density (g/cm<sup>3</sup>):</i> | No data available |
| <i>Relative density:</i>           | No data available |
| <i>Kinematic viscosity:</i>        | No data available |
| <i>Particle characteristics:</i>   | No data available |

## Phase changes

|   |                            |
|---|----------------------------|
| <i>Melting point/Freezing point (°C):</i>             | No data available          |
| <i>Softening point/range (waxes and pastes) (°C):</i> | Does not apply to liquids. |
| <i>Boiling point (°C):</i>                            | No data available          |
| <i>Vapour pressure:</i>                               | No data available          |
| <i>Relative vapour density:</i>                       | No data available          |
| <i>Decomposition temperature (°C):</i>                | No data available          |

## Data on fire and explosion hazards

|   |                   |
|---|-------------------|
| <i>Flash point (°C):</i>                        | No data available |
| <i>Flammability (°C):</i>                       | No data available |
| <i>Auto-ignition temperature (°C):</i>          | No data available |
| <i>Lower and upper explosion limit (% v/v):</i> | No data available |

## Solubility

|  |                   |
|--|-------------------|
| <i>Solubility in water:</i>                  | No data available |
| <i>n-octanol/water coefficient (LogKow):</i> | No data available |
| <i>Solubility in fat (g/L):</i>              | No data available |

## 9.2. Other information

|   |                    |
|---|--------------------|
| <i>Evaporation rate (n-butylacetate = 100):</i> | No data available  |
| <i>Other physical and chemical parameters:</i>  | No data available. |
| <i>Oxidizing properties:</i>                    | No data available  |

# SECTION 10: STABILITY AND REACTIVITY

## 10.1. Reactivity

Not reactive under recommended handling and storage conditions.

## 10.2. Chemical stability

Stable under recommended handling and storage conditions.

## 10.3. Possibility of hazardous reactions

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

## 10.4. Conditions to avoid

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

**10.5. Incompatible materials**

No specific requirements

**10.6. Hazardous decomposition products**

The product is not degraded when used as specified in section 1.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

|                    |             |
|--------------------|-------------|
| Product/substance  | Glycerol    |
| Species:           | Rat         |
| Route of exposure: | Oral        |
| Test:              | LD50        |
| Result:            | 12600 mg/kg |

**Skin corrosion/irritation**

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

**Serious eye damage/irritation**

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

**Respiratory sensitisation**

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

**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**

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**

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

**11.2. Information on other hazards****Long term effects**

None known.

**Endocrine disrupting properties**

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

**Other information**

None known.

## 12.1. Toxicity

## 12.2. Persistence and degradability

### 12.3. Bioaccumulative potential

## 12.4. Mobility in soil

## 12.5. Results of PBT and vPvB assessment

## 12.6. Endocrine disrupting properties

## 12.7. Other adverse effects

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

*EWC code:* Not applicable.

## Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

## SECTION 14: TRANSPORT INFORMATION

Frag/AT Enzyme Mix



|      | <b>14.1<br/>UN / ID</b> | <b>14.2<br/>UN proper shipping name</b> | <b>14.3<br/>Hazard class(es)</b> | <b>14.4<br/>PG*</b> | <b>14.5<br/>Env**</b> | <b>Other<br/>information:</b>                  |
|------|-------------------------|---|----------------------------------|---------------------|-----------------------|--|
| IATA | Not regulated           | -                                       | Transport hazard class: None     | None                | No                    | See below<br>for<br>additional<br>information. |

\* Packing group

\*\* Environmental hazards

#### **Additional information**

Not dangerous goods according to ADR, IATA and IMDG.

#### **14.6. Special precautions for user**

Not applicable.

#### **14.7. Maritime transport in bulk according to IMO instruments**

No data available.

### **SECTION 15: REGULATORY INFORMATION**

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

*Restrictions for application:*

Restricted to professional users.

*Demands for specific education:*

No specific requirements.

*SEVESO - Categories / dangerous substances:*

Not applicable.

*Additional information:*

WGK class: WGK 3

*Sources:*

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.  
 Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV).  
 Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).  
 Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

#### **15.2. Chemical safety assessment**

No

### **SECTION 16: OTHER INFORMATION**

#### **Abbreviations and acronyms**

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS = Chemical Abstracts Service  
CE = Conformité Européenne (European conformity)  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
CSA = Chemical Safety Assessment  
CSR = Chemical Safety Report  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
EINECS = European Inventory of Existing Commercial chemical Substances  
ES = Exposure Scenario  
EUH statement = CLP-specific Hazard statement  
EuPCS = European Product Categorisation System  
EWC = European Waste Catalogue  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer (IARC)  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
PNEC = Predicted No Effect Concentration  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
RRN = REACH Registration Number  
SCL = A specific concentration limit  
SVHC = Substances of Very High Concern  
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
STOT-SE = Specific Target Organ Toxicity - Single Exposure  
TWA = Time weighted average  
UN = United Nations  
UVBC = Unknown or variable composition, complex reaction products or of biological materials  
VOC = Volatile Organic Compound  
vPvB = Very Persistent and Very Bioaccumulative

**Additional information**

Not applicable.

**The safety data sheet is validated by**

Watchmaker Genomics, Inc.

**Other**

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.

Information in this safety data sheet cannot be used as a product specification.

Country-language: DE-en

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information

available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

## SAFETY DATA SHEET

# Frag/AT Buffer

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

*Trade name:* Frag/AT Buffer

*Product no.:* W0004

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

*Relevant identified uses of the substance or mixture:* Laboratory use  
Restricted to professional users.

*Uses advised against:* in vivo

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

*Company and address:* **Watchmaker Genomics, Inc.**

5744 Central Ave, Ste 100

CO 80301 Boulder

USA

T: +1 720-543-2174

*E-mail:* info@watchmakergenomics.com

*Revision:* 12/04/2024

*SDS Version:* 1.0

### 1.4. Emergency telephone number

In urgent situations: Call 112 and request the poison information centre. (24h service)  
Giftnotrufzentrale Berlin, Emergency telephone: +49 30 19240 (day and night)  
See also section 4 for first aid measures.

## SECTION 2: HAZARDS IDENTIFICATION

Classified according to Regulation (EC) No. 1272/2008 (CLP).

### 2.1. Classification of the substance or mixture

Acute Tox. 3; H301, Toxic if swallowed.

STOT SE 2; H371, May cause damage to organs.

Aquatic Chronic 3; H412, Harmful to aquatic life with long lasting effects.

### 2.2. Label elements

*Hazard pictogram(s):*



*Signal word:* Danger

*Hazard statement(s):* Toxic if swallowed. (H301)  
May cause damage to organs. (H371)  
Harmful to aquatic life with long lasting effects. (H412)

**Precautionary statement(s):**
*General:*

-

*Prevention:*

 Do not breathe vapour/mist. (P260)  
 Wash hands and exposed skin thoroughly after handling. (P264)  
 Avoid release to the environment. (P273)

*Response:*

 IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310)  
 Specific treatment (see instructions on this label). (P321)

*Storage:*

-

*Disposal:*

Dispose of contents/container in accordance with local regulation (P501)

*Hazardous substances:*

Tetramethylammonium chloride

*Additional labelling:*

Not applicable.

**2.3. Other hazards**
*Additional warnings:*

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**
**3.1. Substances**

Not applicable. This product is a mixture.

**3.2. Mixtures**

| Product/substance            | Identifiers   | % w/w | Classification   | Note |
|------------------------------|---|-------|--|------|
| Tromethamine                 | CAS No.: 77-86-1<br>EC No.: 201-064-4<br>REACH: 01-2119957659-16-XXXX<br>Index No.: | 3-5%  |  |      |
| Tetramethylammonium chloride | CAS No.: 75-57-0<br>EC No.: 200-880-8<br>REACH: 01-2119970924-26-XXXX<br>Index No.: | 1-3%  | Acute Tox. 2, H300<br>Acute Tox. 3, H311<br>Skin Irrit. 2, H315<br>STOT SE 1, H370 (Central nervous system)<br>Aquatic Chronic 2, H411 |      |

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

## Other information

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## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

#### *General information:*

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

#### *Inhalation:*

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

#### *Skin contact:*

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

#### *Eye contact:*

If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

#### *Ingestion:*

In the case of ingestion, contact a doctor immediately. If the person is conscious, give them water. DO NOT try to induce vomiting unless this is recommended by a doctor. Hold head facing down to prevent vomit from returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

#### *Burns:*

Not applicable.

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

None known.

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

IF exposed or concerned:

Get immediate medical advice/attention.

### Information to medics

Bring this safety data sheet or the label from this product.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

Not applicable.

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

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Halogenated compounds  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon oxides (CO / CO<sub>2</sub>)  
Some metal oxides

**5.3. Advice for firefighters**

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Avoid direct contact with spilled substances.  
Contaminated areas may be slippery.

**6.2. Environmental precautions**

Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

**6.3. Methods and material for containment and cleaning up**

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

**6.4. Reference to other sections**

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

**SECTION 7: HANDLING AND STORAGE****7.1. Precautions for safe handling**

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

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

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Joint storage is permitted for products in storage classes: 2B, 6.1A, 6.1B, 6.1C, 6.1D, 8A, 8B, 10, 11, 12, 13

May only be stored together products in storage classes: 3, 4.1B, 4.2, 4.3, 5.1B provided that this will not lead to a substantial increase in risk. A substantial increase in risk can be prevented through separate storage.

Joint storage is NOT allowed for products in all other storage classes.

*Recommended storage material:*

Keep only in original packaging.

*Storage class:*

Storage class 6.1 D (Non-combustible acutely toxic substances or substances with chronic effects).  
 TRGS 510 - Storage of hazardous substances in non-stationary containers.

*Storage temperature:*

-25 °C to -15 °C

*Incompatible materials:*

No specific requirements

### 7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

No substances are listed in the national list of substances with an occupational exposure limit.

#### DNEL

Tetramethylammonium chloride

| Duration:   | Route of exposure: | DNEL:                  |
|---|--------------------|------------------------|
| Long term – Systemic effects - General population | Dermal             | 250 µg/kgbw/day        |
| Long term – Systemic effects - Workers            | Dermal             | 400 µg/kgbw/day        |
| Long term – Systemic effects - General population | Inhalation         | 1.76 mg/m <sup>3</sup> |
| Long term – Systemic effects - Workers            | Inhalation         | 2.9 mg/m <sup>3</sup>  |
| Long term – Systemic effects - General population | Oral               | 250 µg/kgbw/day        |

Tromethamine

| Duration:                              | Route of exposure: | DNEL:                   |
|--|--------------------|-------------------------|
| Long term – Systemic effects - Workers | Dermal             | 166.7 mg/kg bw/day      |
| Long term – Systemic effects - Workers | Inhalation         | 117.5 mg/m <sup>3</sup> |

#### PNEC

Tetramethylammonium chloride

| Route of exposure:                | Duration of Exposure: | PNEC:     |
|-----------------------------------|-----------------------|-----------|
| Freshwater                        |                       | 600 ng/L  |
| Freshwater sediment               |                       | 35 µg/kg  |
| Intermittent release (freshwater) |                       | 36 µg/L   |
| Marine water                      |                       | 60 ng/L   |
| Marine water sediment             |                       | 3.5 µg/kg |
| Sewage treatment plant            |                       | 6 mg/L    |
| Soil                              |                       | 6.6 µg/kg |

Tromethamine

| Route of exposure:     | Duration of Exposure: | PNEC:    |
|------------------------|-----------------------|----------|
| Sewage treatment plant |                       | 300 mg/L |

### 8.2. Exposure controls



Apply general control to prevent unnecessary exposure

|  |   |
|--|---|
| <i>General recommendations:</i>                  | When handling chemical products, do not eat, drink or smoke.  |
| <i>Exposure scenarios:</i>                       | There are no exposure scenarios implemented for this product.   |
| <i>Exposure limits:</i>                          | Occupational exposure limits have not been defined for the substances in this product.  |
| <i>Appropriate technical measures:</i>           | Apply standard precautions during use of the product. Avoid inhalation of vapours.  |
| <i>Hygiene measures:</i>                         | Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. |
| <i>Measures to avoid environmental exposure:</i> | Keep damming materials near the workplace. If possible, collect spillage during work.   |

### Individual protection measures, such as personal protective equipment

|                               |  |
|-------------------------------|--|
| <i>Generally:</i>             | Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).  |
| <i>Respiratory Equipment:</i> | If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.   |
| <i>Skin protection:</i>       | Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent). Appropriate techniques should be used to remove used gloves and contaminated clothing. |
| <i>Hand protection:</i>       | Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves.   |
| <i>Eye protection:</i>        | Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).  |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

|                                    |                   |
|------------------------------------|-------------------|
| <i>Physical state:</i>             | Liquid            |
| <i>Colour:</i>                     | Clear             |
| <i>Odour / Odour threshold:</i>    | Mild              |
| <i>pH:</i>                         | 8.3               |
| <i>Density (g/cm<sup>3</sup>):</i> | No data available |
| <i>Relative density:</i>           | No data available |

|                                  |                            |
|----------------------------------|----------------------------|
| <i>Kinematic viscosity:</i>      | No data available          |
| <i>Particle characteristics:</i> | Does not apply to liquids. |

### Phase changes

|   |                            |
|---|----------------------------|
| <i>Melting point/Freezing point (°C):</i>             | No data available          |
| <i>Softening point/range (waxes and pastes) (°C):</i> | Does not apply to liquids. |
| <i>Boiling point (°C):</i>                            | No data available          |
| <i>Vapour pressure:</i>                               | No data available          |
| <i>Relative vapour density:</i>                       | No data available          |
| <i>Decomposition temperature (°C):</i>                | No data available          |

### Data on fire and explosion hazards

|   |                   |
|---|-------------------|
| <i>Flash point (°C):</i>                        | No data available |
| <i>Flammability (°C):</i>                       | No data available |
| <i>Auto-ignition temperature (°C):</i>          | No data available |
| <i>Lower and upper explosion limit (% v/v):</i> | No data available |

### Solubility

|  |                   |
|--|-------------------|
| <i>Solubility in water:</i>                  | No data available |
| <i>n-octanol/water coefficient (LogKow):</i> | No data available |
| <i>Solubility in fat (g/L):</i>              | No data available |

### 9.2. Other information

|   |                    |
|---|--------------------|
| <i>Evaporation rate (n-butylacetate = 100):</i> | No data available  |
| <i>Other physical and chemical parameters:</i>  | No data available. |
| <i>Oxidizing properties:</i>                    | No data available  |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Not reactive under recommended handling and storage conditions.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

### 10.4. Conditions to avoid

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

### 10.5. Incompatible materials

No specific requirements

### 10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

Toxic if swallowed.

**Skin corrosion/irritation**

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

**Serious eye damage/irritation**

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

**Respiratory sensitisation**

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

**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 damage to organs.

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**11.2. Information on other hazards****Long term effects**

None known.

**Endocrine disrupting properties**

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

**Other information**

None known.

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**SECTION 12: ECOLOGICAL INFORMATION**

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**12.1. Toxicity**

Harmful to aquatic life with long lasting effects.

**12.2. Persistence and degradability**

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

**12.3. Bioaccumulative potential**

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

**12.4. Mobility in soil**

No data available.

**12.5. Results of PBT and vPvB assessment**

This mixture/product does not contain any substances known to fulfil the criteria for PBT and

vPvB classification.

## 12.6. Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

## 12.7. Other adverse effects

This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms.

This product contains substances, which may cause adverse long-term effects to the aquatic environment.

# SECTION 13: DISPOSAL CONSIDERATIONS

## 13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.

HP 4 - Irritant (skin irritation and eye damage)

HP 5 - Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP 6 - Acute toxicity

HP 14 - Ecotoxic

Dispose of contents/container to an approved waste disposal plant.

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code:

Not applicable.

## Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

# SECTION 14: TRANSPORT INFORMATION

|      | 14.1<br>UN / ID | 14.2<br>UN proper shipping name | 14.3<br>Hazard class(es)     | 14.4<br>PG* | 14.5<br>Env** | Other<br>information:                 |
|------|-----------------|---------------------------------|------------------------------|-------------|---------------|---------------------------------------|
| ADR  | Not regulated   | -                               | Transport hazard class: None | None        | No            | See below for additional information. |
| IMDG | Not regulated   | -                               | Transport hazard class: None | None        | No            | See below for additional information. |
| IATA | Not regulated   | -                               | Transport hazard class: None | None        | No            | See below for additional information. |

\* Packing group

\*\* Environmental hazards

## Additional information

Not dangerous goods according to ADR, IATA and IMDG.

## 14.6. Special precautions for user

Not applicable.

#### **14.7. Maritime transport in bulk according to IMO instruments**

No data available.

### **SECTION 15: REGULATORY INFORMATION**

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

*Restrictions for application:*

Restricted to professional users.

People under the age of 18 shall not be exposed to this product.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

*Demands for specific education:*

No specific requirements.

*SEVESO - Categories / dangerous substances:*

Not applicable.

*Additional information:*

WGK class: WGK 2

*Sources:*

Law for the Protection of Working Youth (Youth Employment Protection Act - JArbSchG).

Law on the protection of mothers at work, in training and in studies (Mutterschutzgesetz - MuSchG) 23.05.2017 (BGBl. I S. 1228).

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

#### **15.2. Chemical safety assessment**

No

### **SECTION 16: OTHER INFORMATION**

#### **Full text of H-phrases as mentioned in section 3**

H300, Fatal if swallowed.

H311, Toxic in contact with skin.

H315, Causes skin irritation.

H370, Causes damage to organs. (Central nervous system)

H411, Toxic to aquatic life with long lasting effects.

#### **Abbreviations and acronyms**

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
CAS = Chemical Abstracts Service  
CE = Conformité Européenne (European conformity)  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
CSA = Chemical Safety Assessment  
CSR = Chemical Safety Report  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
EINECS = European Inventory of Existing Commercial chemical Substances  
ES = Exposure Scenario  
EUH statement = CLP-specific Hazard statement  
EuPCS = European Product Categorisation System  
EWC = European Waste Catalogue  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer (IARC)  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
PNEC = Predicted No Effect Concentration  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
RRN = REACH Registration Number  
SCL = A specific concentration limit  
SVHC = Substances of Very High Concern  
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
STOT-SE = Specific Target Organ Toxicity - Single Exposure  
TWA = Time weighted average  
UN = United Nations  
UVBC = Unknown or variable composition, complex reaction products or of biological materials  
VOC = Volatile Organic Compound  
vPvB = Very Persistent and Very Bioaccumulative

**Additional information**

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

The classification of the substance/mixture in regard of environmental hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

**The safety data sheet is validated by**

Watchmaker Genomics, Inc.

**Other**

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.  
Information in this safety data sheet cannot be used as a product specification.

Country-language: DE-en

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### T4 DNA Ligase (600 U/μL)

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

### 1.1 Product identifier

**Product Name:** T4 DNA Ligase (600 U/μL)

**Product code:** Z0008

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

**Relevant identified uses:** Research Use Only

**Uses advised against:** In vivo

**Reasons why uses advised against:** Not licensed or certified

### 1.3 Details of the manufacturer/supplier of the safety data sheet

**Manufacturer:**

**United States**

Watchmaker Genomics, Inc.  
 5744 Central Ave  
 Suite 100 Boulder, CO 80301  
 720-543-2174

**Supplier:**

**European Union**

Healthlink Europe BV  
 Pettelaarpark 114  
 5216 PS 's-, Hertogenbosch -  
 +31 73 303 0500

### 1.4 Emergency telephone number:

**WORLD (Including UK and Germany)**

ChemTrec

+1 703-741-5970 (24/7)

## SECTION 2: Hazard(s) identification

### 2.1 Classification of the substance or mixture:

**Classification according to Regulation (EC) No. 1272/2008 (CLP):** The substance is not classified as hazardous according to the Globally Harmonized System (GHS).

**Hazard-determining components of labeling:** None

**Additional Information:** None

### 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008 (CLP)**

**Hazard pictograms:** None

**Signal Word:** None

**Hazard statements:** None

**Precautionary statements:** None

### 2.3 Other hazards: None known

## SECTION 3: Composition/information on ingredients

### 3.1 Substance: Not applicable.

### 3.2 Mixture:

| Identification | EU REACH<br>Registration No. | Name | Classification<br>according to<br>Regulation (EC) No.<br>1272/2008 (CLP) | Weight % |
|----------------|------------------------------|------|--|----------|
|                |                              |      |  |          |



## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### T4 DNA Ligase (600 U/μL)

|   |   |          |                 |       |
|---|---|----------|-----------------|-------|
| CAS number:<br>56-81-5<br>EC number:<br>200-289-5 | - | Glycerol | Not classified; | 50-60 |
|---|---|----------|-----------------|-------|

**Additional information:** None

**Full Text of H and EUH statements:** See section 16

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General notes:

Show this Safety Data Sheet to the doctor in attendance.

##### Following inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. If respiratory symptoms develop or persist, seek medical advice/attention.

##### Following skin contact:

Wash affected area with plenty of soap and water. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, seek medical advice/attention.

##### Following eye contact:

Immediately rinse eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. If eye irritation develops or persists, seek medical advice/attention.

##### Following ingestion:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

##### Self-Protection of the first aider:

Take precautions to ensure your own safety before attempting rescue. Wear appropriate safety eyewear, gloves, protective clothing and respiratory protection to prevent exposure. See Section 8 of this SDS for personal protective equipment recommendations. Do not use the mouth to mouth method if victim has ingested or inhaled the product. Give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper device.

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

##### Acute symptoms and effects:

No significant acute effects.

##### Delayed symptoms and effects:

No significant delayed effects.

#### 4.3 Indication of any immediate medical attention and special treatment needed

##### Specific treatment:

Not determined or not available.

##### Notes for the doctor:

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

##### Unsuitable extinguishing media:

## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### T4 DNA Ligase (600 U/μL)

Do not use water jet.

#### 5.2 Special hazards arising from the substance or mixture:

Thermal decomposition may produce irritating and toxic fumes including carbon oxides, potassium oxides, phosphorus oxides, acetaldehyde and allyl alcohol.

#### 5.3 Advice for firefighters

##### Personal protection equipment:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA with a full-face piece operated in positive pressure mode).

##### Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures:

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

#### 6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

#### 6.3 Methods and material for containment and cleaning up:

Stop leak if you can do it without risk. Contain and collect spillage with sand or inert absorbent and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

#### 6.4 Reference to other sections:

For personal protective equipment see Section 8. For disposal see Section 13.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

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

Store out of direct sunlight. Keep away from food and beverages. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

Storage temperature: -25°C to -15°C.

#### 7.3 Specific end use(s):

Refer to Section 1 (Recommended Use).

### SECTION 8: Exposure controls/personal protection

## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### T4 DNA Ligase (600 U/ $\mu$ L)



### 8.1 Control parameters

Only those substances with limit values have been included below.

#### Occupational Exposure limit values:

| Country (Legal Basis) | Substance | Identifier | Permissible concentration   |
|-----------------------|-----------|------------|---|
| Croatia               | Glycerol  | 56-81-5    | TWA Exposure Limit Value: 10 mg/m <sup>3</sup>  |
| Czech Republic        | Glycerol  | 56-81-5    | Ceiling Limit: 15 mg/m <sup>3</sup>   |
|                       | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Estonia               | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Germany (MAK)         | Glycerol  | 56-81-5    | 8-Hour TWA: 200 mg/m <sup>3</sup>   |
| Germany (TRGS 900)    | Glycerol  | 56-81-5    | Limit Value: 200 mg/m <sup>3</sup>  |
| Greece                | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Poland                | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Portugal              | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Slovakia              | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Spain                 | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| United Kingdom        | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Cyprus                | Glycerol  | 56-81-5    | 8-Hour TWA: 2 mg/m <sup>3</sup>   |
| Lithuania             | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust: inhalable fraction)   |
|                       | Glycerol  | 56-81-5    | 8-Hour TWA: 5 mg/m <sup>3</sup> (Dust: respirable fraction)   |
| Slovenia              | Glycerol  | 56-81-5    | 8-Hour TWA: 200 mg/m <sup>3</sup>   |
|                       | Glycerol  | 56-81-5    | 15-Minute STEL: 400 mg/m <sup>3</sup>   |
| Belgium               | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup>  |
| Denmark               | Glycerol  | 56-81-5    | 8-Hour TWA: 3 mg/m <sup>3</sup> (Organic dusts, total)  |
|                       | Glycerol  | 56-81-5    | STEL: 6 mg/m <sup>3</sup> (Organic dusts, total)  |
| Finland               | Glycerol  | 56-81-5    | 8-Hour TWA: 20 mg/m <sup>3</sup>  |
| France                | Glycerol  | 56-81-5    | TWA: 10 mg/m <sup>3</sup>   |
| Ireland               | Glycerol  | 56-81-5    | 8-Hour TWA: 4 mg/m <sup>3</sup> (respirable dust)   |
|                       | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Total inhalable dust)   |
| Italy                 | Glycerol  | 56-81-5    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Particles (insoluble or poorly soluble) not otherwise specified, inhalable particles) |
|                       | Glycerol  | 56-81-5    | 8-Hour TWA: 3 mg/m <sup>3</sup> (Particles (insoluble or poorly soluble) not otherwise specified, respirable particles) |

## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### T4 DNA Ligase (600 U/μL)

#### Biological limit values:

No biological exposure limits noted for the ingredient(s).

#### Derived No Effect Level (DNEL):

**Ingredient Name:** Glycerol

**CAS #:** 56-81-5

|                                       |                      |                                   |
|---------------------------------------|----------------------|-----------------------------------|
| Workers - Systemic Effects            | Acute - Oral         | Not determined or not applicable. |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | Not determined or not applicable. |
|                                       | Chronic - Inhalation | No hazard identified              |
|                                       | Chronic - Dermal     | No hazard identified              |
| Workers - Local Effects               | Acute - Oral         | Not determined or not applicable. |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | Not determined or not applicable. |
|                                       | Chronic - Inhalation | No hazard identified              |
|                                       | Chronic - Dermal     | No hazard identified              |
| General Population - Systemic Effects | Acute - Oral         | No hazard identified              |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | No hazard identified              |
|                                       | Chronic - Inhalation | No hazard identified              |
|                                       | Chronic - Dermal     | No hazard identified              |
| General Population - Local Effect     | Acute - Oral         | Not determined or not applicable. |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | Not determined or not applicable. |
|                                       | Chronic - Inhalation | No hazard identified              |
|                                       | Chronic - Dermal     | No hazard identified              |

#### Predicted No Effect Concentration (PNEC):

**Ingredient Name:** Glycerol

**CAS #:** 56-81-5

| Environmental Protection Target    | PNEC                 |
|------------------------------------|----------------------|
| Fresh water                        | No hazard identified |
| Freshwater sediments               | No hazard identified |
| Marine water                       | No hazard identified |
| Marine sediments                   | No hazard identified |
| Microorganisms in sewage treatment | No hazard identified |
| Soil (agricultural)                | No hazard identified |
| Air                                | No hazard identified |
| Oral (Secondary Poisoning)         | No exposure expected |

#### Information on monitoring procedures:

Not determined or not applicable.

## 8.2 Exposure controls

## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### T4 DNA Ligase (600 U/μL)

#### Appropriate engineering controls:

Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

#### Personal protection equipment

##### Eye and face protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

##### Skin and body protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

##### Respiratory protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

#### General hygienic measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

#### Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

|   |                                   |
|---|-----------------------------------|
| Product (substance / mixture) related measures to prevent exposure: | Not determined or not applicable. |
| Instruction measures to prevent exposure:                           | Not determined or not applicable. |
| Organisational measures to prevent exposure:                        | Not determined or not applicable. |
| Technical measures to prevent exposure:                             | Not determined or not applicable. |

#### Risk management measures to control exposure:

Not determined or not applicable.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                    |                                  |
|------------------------------------|----------------------------------|
| Physical State                     | Clear Liquid                     |
| Color                              | Not determined or not available. |
| Odor/Odor threshold                | Not determined or not available. |
| pH                                 | Not determined or not available. |
| Melting point/freezing point       | Not determined or not available. |
| Initial boiling point/range        | Not determined or not available. |
| Flash point (closed cup)           | Not determined or not available. |
| Flammability                       | Not determined or not available. |
| Upper flammability/explosive limit | Not determined or not available. |
| Lower flammability/explosive limit | Not determined or not available. |
| Vapor pressure                     | Not determined or not available. |

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### T4 DNA Ligase (600 U/μL)

|   |                                  |
|---|----------------------------------|
| Relative vapor density                  | Not determined or not available. |
| Density                                 | Not determined or not available. |
| Relative density                        | Not determined or not available. |
| Solubilities                            | Not determined or not available. |
| Partition coefficient (n-octanol/water) | Not determined or not available. |
| Auto/Self-ignition temperature          | Not determined or not available. |
| Decomposition temperature               | Not determined or not available. |
| Kinematic viscosity                     | Not determined or not available. |
| Particle characteristics                | Not determined or not available. |

## 9.2 Other information

### 9.2.1 Information with regard to physical hazard classes

|   |                                  |
|---|----------------------------------|
| Explosives  | No data available/Not applicable |
| Flammable gases   | No data available/Not applicable |
| Aerosols  | No data available/Not applicable |
| Oxidizing gases   | No data available/Not applicable |
| Gases under pressure  | No data available/Not applicable |
| Flammable liquids   | No data available/Not applicable |
| Flammable solids  | No data available/Not applicable |
| Self-reactive substances and mixtures                                     | No data available/Not applicable |
| Pyrophoric liquids  | No data available/Not applicable |
| Pyrophoric solids   | No data available/Not applicable |
| Self-heating substances and mixtures                                      | No data available/Not applicable |
| Substances and mixtures, which emit flammable gases in contact with water | No data available/Not applicable |
| Oxidizing liquids   | No data available/Not applicable |
| Oxidizing solids  | No data available/Not applicable |
| Organic peroxides   | No data available/Not applicable |
| Corrosive to metals   | No data available/Not applicable |
| Desensitized explosives   | No data available/Not applicable |

### 9.2.2 Other safety characteristics

None.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity:

Not reactive under recommended handling and storage conditions.

### 10.2 Chemical stability:

Stable under recommended handling and storage conditions.

### 10.3 Possibility of hazardous reactions:

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

### 10.4 Conditions to avoid:

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

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### T4 DNA Ligase (600 U/ $\mu$ L)

#### 10.5 Incompatible materials:

Strong oxidizing agents

#### 10.6 Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### SECTION 11: Toxicological information

#### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### Acute toxicity

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

**Product data:** No data available.

**Substance data:**

| Name     | Route      | Result  |
|----------|------------|---|
| Glycerol | oral       | LD50 Rat: 27,200 mg/kg                              |
|          | dermal     | LD50 Guinea Pig: 56,750 mg/kg                       |
|          | inhalation | LC50 Rat: > 5850 mg/m <sup>3</sup> (4 hr [Aerosol]) |

##### Skin corrosion/irritation

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

**Product data:**

No data available.

**Substance data:** No data available.

##### Serious eye damage/irritation

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

**Product data:**

No data available.

**Substance data:** No data available.

##### Respiratory or skin sensitization

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

**Product data:**

No data available.

**Substance data:** No data available.

##### Carcinogenicity

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

**Product data:** No data available.

**Substance data:** No data available.

**International Agency for Research on Cancer (IARC):** None of the ingredients are listed.

##### Germ cell mutagenicity

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

**Product data:** No data available.

**Substance data:** No data available.

##### Reproductive Toxicity

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

**Product data:**

No data available.

**Substance data:** No data available.

##### Specific target organ toxicity (single exposure)

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

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### T4 DNA Ligase (600 U/μL)

**Product data:**

No data available.

**Substance data:** No data available.

**Specific target organ toxicity (repeated exposure)**

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

**Product data:**

No data available.

**Substance data:** No data available.

**Aspiration toxicity**

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

**Product data:**

No data available.

**Substance data:** No data available.

**Information on likely routes of exposure:**

Inhalation; Ingestion; Skin contact; Eye contact

**Symptoms related to the physical, chemical and toxicological characteristics:**

Refer to Section 4 of this SDS.

#### 11.2 Information on other hazards

**Endocrine disrupting properties:**

**Substance data:** No data available.

**Other information:**

No data available.

### SECTION 12: Ecological information

#### 12.1 Toxicity

**Acute (short-term) toxicity**

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

**Product data:** No data available.

**Substance data:**

| Name     | Result  |
|----------|---|
| Glycerol | Fish LC50 <i>Oncorhynchus mykiss</i> : 54,000 mg/L (96 hr)          |
|          | Aquatic Invertebrates LC50 <i>Daphnia magna</i> : 1955 mg/L (48 hr) |

**Chronic (long-term) toxicity**

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

**Product data:** No data available.

**Substance data:** No data available.

#### 12.2 Persistence and degradability

**Product data:** No data available.

**Substance data:**

| Name     | Result   |
|----------|--|
| Glycerol | The substance is readily biodegradable. 94% degradation, measured by TOC removal, after 24 hr. |

#### 12.3 Bioaccumulative potential

**Product data:** No data available.

**Substance data:**



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### T4 DNA Ligase (600 U/μL)

| Name     | Result  |
|----------|---|
| Glycerol | The substance has a low potential for bioaccumulation based on log Kow ≤ 3. |

#### 12.4 Mobility in soil

**Product data:** No data available.

**Substance data:** No data available.

#### 12.5 Results of PBT and vPvB assessment

**Product data:**

**PBT assessment:** This product does not contain any substances that are assessed to be a PBT.

**vPvB assessment:** This product does not contain any substances that are assessed to be a vPvB.

**Substance data:**

**PBT assessment:**

|          |                           |
|----------|---------------------------|
| Glycerol | The substance is not PBT. |
|----------|---------------------------|

**vPvB assessment:**

|          |                            |
|----------|----------------------------|
| Glycerol | The substance is not vPvB. |
|----------|----------------------------|

#### 12.6 Endocrine disrupting properties

**Substance data:** No data available.

#### 12.7 Other adverse effects: No data available.

#### 12.8 Hazard to the ozone layer

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

**Product data:** No data available.

**Substance data:** No data available.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### 13.1.1 Product / Packaging disposal:

Dispose of in accordance with all applicable local, regional, state and federal regulations.

**Waste codes / waste designations according to LoW:** Not determined or not available.

##### 13.1.2 Waste treatment-relevant information: Not determined or not available.

##### 13.1.3 Sewage disposal-relevant information: Not determined or not available.

##### 13.1.4 Other disposal recommendations: It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities

### SECTION 14: Transport information

#### International Carriage of Dangerous Goods by Road/Rail (ADR/RID)

|                               |               |
|-------------------------------|---------------|
| UN number or ID number        | Not regulated |
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |
| Special precautions for user  | None          |

#### International Carriage of Dangerous Goods by Inland Waterways (ADN)

|                        |               |
|------------------------|---------------|
| UN number or ID number | Not regulated |
|------------------------|---------------|

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### T4 DNA Ligase (600 U/μL)

|                               |               |
|-------------------------------|---------------|
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |
| Special precautions for user  | None          |

### International Maritime Dangerous Goods (IMDG)

|                               |               |
|-------------------------------|---------------|
| UN number or ID number        | Not regulated |
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |
| Special precautions for user  | None          |

### International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

|                               |               |
|-------------------------------|---------------|
| UN number or ID number        | Not regulated |
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |
| Special precautions for user  | None          |

### Maritime Transport in Bulk according to IMO Instruments

|                                 |      |
|---------------------------------|------|
| Bulk Name                       | None |
| Ship type                       | None |
| Pollution category              | None |
| IMO hazard class                | None |
| Environmental hazards           | None |
| Material hazardous only in bulk | None |
| Cargo Group                     | None |

## SECTION 15: Regulatory information

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

#### European regulations

**Inventory listing (EINECS):** All ingredients are listed or exempt.

**REACH SVHC candidate list:** Not determined.

**REACH SVHC Authorizations:** Not determined.

**REACH Restriction:** Not determined.

**Water hazard class (WGK) (Product):** Not determined.

**Water hazard class (WGK) (Substance):** Not determined.

#### Other regulations

**Germany TA Luft:** None of the ingredients are listed.

**Additional information:** Not determined.

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### T4 DNA Ligase (600 U/μL)

#### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

### SECTION 16: Other information

**Abbreviations and Acronyms:** None

**Disclaimer:**

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

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**End of Safety Data Sheet**

## Safety Data Sheet

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### 5X Rapid Ligation Buffer

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

##### 1.1 Product identifier

**Product Name:** 5X Rapid Ligation Buffer

**Product code:** W0006

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

**Relevant identified uses:** Research use only

**Uses advised against:** In vivo

**Reasons why uses advised against:** Not licensed or certified

##### 1.3 Details of the manufacturer/supplier of the safety data sheet

**Manufacturer:**

**United States**

Watchmaker Genomics, Inc.

5744 Central Ave

Suite 100 Boulder, CO 80301

720-543-2174

##### 1.4 Emergency telephone number:

**WORLD (Including UK and Germany)**

ChemTrec

+1 703-741-5970 (24/7)

#### SECTION 2: Hazard(s) identification

##### 2.1 Classification of the substance or mixture:

**Classification according to Regulation (EC) No. 1272/2008 (CLP):** The substance is not classified as hazardous according to the Globally Harmonized System (GHS).

**Hazard-determining components of labeling:** None

**Additional Information:** None

##### 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008 (CLP)**

**Hazard pictograms:** None

**Signal Word:** None

**Hazard statements:** None

**Precautionary statements:** None

##### 2.3 Other hazards: None known

#### SECTION 3: Composition/information on ingredients

##### 3.1 Substance: Not applicable.

##### 3.2 Mixture:

| Identification | EU REACH<br>Registration No. | Name | Classification<br>according to<br>Regulation (EC) No.<br>1272/2008 (CLP) | Weight % |
|----------------|------------------------------|------|--|----------|
|                |                              |      |  |          |

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### 5X Rapid Ligation Buffer

|   |   |  |  |       |
|---|---|--|--|-------|
| CAS number:<br>25322-68-3                         | - | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | Not classified;  | 25-30 |
| CAS number:<br>77-86-1<br>EC number:<br>201-064-4 | - | Tromethamine   | Skin Irrit. 2; H315<br>STOT SE 3 (RI);<br>H335<br>Eye Irrit. 2; H319 | 0.9   |

**Additional information:** None

**Full Text of H and EUH statements:** See section 16

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General notes:

Show this Safety Data Sheet to the doctor in attendance.

##### Following inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. If respiratory symptoms develop or persist, seek medical advice/attention.

##### Following skin contact:

Wash affected area with plenty of soap and water. Remove contaminated clothing and launder before reuse. If skin irritation develops or persists, seek medical advice/attention.

##### Following eye contact:

Immediately rinse eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. If eye irritation develops or persists, seek medical advice/attention.

##### Following ingestion:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

##### Self-Protection of the first aider:

Take precautions to ensure your own safety before attempting rescue. Wear appropriate safety eyewear, gloves, protective clothing and respiratory protection to prevent exposure. See Section 8 of this SDS for personal protective equipment recommendations. Do not use the mouth to mouth method if victim has ingested or inhaled the product. Give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper device.

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

##### Acute symptoms and effects:

No significant acute effects/symptoms.

##### Delayed symptoms and effects:

No significant delayed effects/symptoms.

#### 4.3 Indication of any immediate medical attention and special treatment needed

##### Specific treatment:

Not determined or not available.

##### Notes for the doctor:

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

## Safety Data Sheet

According to Regulation (EC) No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and (EC) No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878.

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### 5X Rapid Ligation Buffer

#### **Suitable extinguishing media:**

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

#### **Unsuitable extinguishing media:**

Do not use water jet.

#### **5.2 Special hazards arising from the substance or mixture:**

Thermal decomposition may produce irritating and toxic fumes including carbon oxides and nitrogen oxides.

#### **5.3 Advice for firefighters**

##### **Personal protection equipment:**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

##### **Special precautions:**

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

### SECTION 6: Accidental release measures

#### **6.1 Personal precautions, protective equipment and emergency procedures:**

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling.

#### **6.2 Environmental precautions:**

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

#### **6.3 Methods and material for containment and cleaning up:**

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

#### **6.4 Reference to other sections:**

For personal protective equipment see Section 8. For disposal see Section 13.

### SECTION 7: Handling and storage

#### **7.1 Precautions for safe handling:**

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

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

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10). Storage Temperature: -25 °C to -15 °C

#### **7.3 Specific end use(s):**

Refer to Section 1 (Recommended Use).

### SECTION 8: Exposure controls/personal protection

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### 5X Rapid Ligation Buffer



### 8.1 Control parameters

Only those substances with limit values have been included below.

#### Occupational Exposure limit values:

| Country (Legal Basis) | Substance  | Identifier | Permissible concentration   |
|-----------------------|--|------------|---|
| Denmark               | Tromethamine   | 77-86-1    | 8-Hour TWA: 3 mg/m <sup>3</sup> (Dust and mist, organic, total dust)          |
|                       | Tromethamine   | 77-86-1    | STEL: 6 mg/m <sup>3</sup> (Dust and mist, organic, total dust)                |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 8-Hour TWA: 1000 mg/m <sup>3</sup>  |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 15-Minute STEL: 2000 mg/m <sup>3</sup>  |
| Finland               | Tromethamine   | 77-86-1    | 8-Hour TWA: 5 mg/m <sup>3</sup> (Dust and mist, organic, total dust)          |
|                       | Tromethamine   | 77-86-1    | 15-Minute STEL: 10 mg/m <sup>3</sup> (Dust and mist, organic, total dust)     |
| Germany (TRGS 900)    | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable, insoluble particulates)    |
|                       | Tromethamine   | 77-86-1    | STEL: 20 mg/m <sup>3</sup> (Dust, inhalable, insoluble particulates)          |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 1.25 mg/m <sup>3</sup> (Dust, respirable, insoluble particulates) |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 8-Hour TWA: 200 mg/m <sup>3</sup> (Inhalable fraction)                        |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 15-Minute STEL: 500 mg/m <sup>3</sup> (Inhalable fraction)                    |
| Austria               | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable)                            |
|                       | Tromethamine   | 77-86-1    | STEL: 20 mg/m <sup>3</sup> (Dust, inhalable)                                  |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 5 mg/m <sup>3</sup> (Dust, respirable)                            |
|                       | Tromethamine   | 77-86-1    | 15-Minute STEL: 10 mg/m <sup>3</sup> (Dust, respirable)                       |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 8-Hour TWA: 1000 mg/m <sup>3</sup> (Inhalable fraction)                       |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 15-Minute STEL: 4000 mg/m <sup>3</sup> (Inhalable fraction)                   |
| Belgium               | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable)                            |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 3 mg/m <sup>3</sup> (Dust, respirable)                            |

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| Country (Legal Basis) | Substance  | Identifier | Permissible concentration   |
|-----------------------|--|------------|---|
| France                | Tromethamine   | 77-86-1    | 8-Hour TWA: 7 mg/m <sup>3</sup> (Dust, inhalable)                                 |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 3.5 mg/m <sup>3</sup> (Dust, respirable)                              |
| Hungary               | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable)                                |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 6 mg/m <sup>3</sup> (Dust, respirable)                                |
| Ireland               | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable)                                |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 4 mg/m <sup>3</sup> (Dust, respirable)                                |
| Poland                | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable)                                |
| Spain                 | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable)                                |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 3 mg/m <sup>3</sup> (Dust, respirable)                                |
| Sweden                | Tromethamine   | 77-86-1    | 8-Hour TWA: 10 mg/m <sup>3</sup> (Dust, inhalable)                                |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 5 mg/m <sup>3</sup> (Dust, respirable)                                |
| Germany (MAK)         | Tromethamine   | 77-86-1    | 8-Hour TWA: 4 mg/m <sup>3</sup> (Dust, inhalable)                                 |
|                       | Tromethamine   | 77-86-1    | 8-Hour TWA: 0.3 mg/m <sup>3</sup> (Dust, respirable, granular, bio-resistant)     |
|                       | Tromethamine   | 77-86-1    | 15-Minute STEL: 2.4 mg/m <sup>3</sup> (Dust, respirable, granular, bio-resistant) |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 8-Hour TWA: 250 mg/m <sup>3</sup> (Inhalable fraction)                            |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 15-Minute STEL: 500 mg/m <sup>3</sup> (Inhalable fraction)                        |
| Slovakia              | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 8-Hour TWA: 1000 mg/m <sup>3</sup>  |
| Slovenia              | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 8-Hour TWA: 1000 mg/m <sup>3</sup> (Inhalable fraction)                           |
|                       | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | 15-Minute STEL: 8000 mg/m <sup>3</sup> (Inhalable fraction)                       |

#### Biological limit values:

No biological exposure limits noted for the ingredient(s).

#### Derived No Effect Level (DNEL):

**Ingredient Name:** Tromethamine

**CAS #:** 77-86-1



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|                                       |                      |                                   |
|---------------------------------------|----------------------|-----------------------------------|
| Workers - Systemic Effects            | Acute - Oral         | Not determined or not applicable. |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | Not determined or not applicable. |
|                                       | Chronic - Inhalation | 117.5                             |
|                                       | Chronic - Dermal     | 166.7 mg/kg bw/day                |
| Workers - Local Effects               | Acute - Oral         | Not determined or not applicable. |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | Not determined or not applicable. |
|                                       | Chronic - Inhalation | No hazard identified              |
|                                       | Chronic - Dermal     | No hazard identified              |
| General Population - Systemic Effects | Acute - Oral         | No hazard identified              |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | 8.3 mg/kg bw/day                  |
|                                       | Chronic - Inhalation | 29 mg/m <sup>3</sup>              |
|                                       | Chronic - Dermal     | 83.3 mg/kg bw/day                 |
| General Population - Local Effect     | Acute - Oral         | Not determined or not applicable. |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | Not determined or not applicable. |
|                                       | Chronic - Inhalation | No hazard identified              |
|                                       | Chronic - Dermal     | No hazard identified              |

**Ingredient Name:** Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated

**CAS #:** 25322-68-3

|                            |                      |                                   |
|----------------------------|----------------------|-----------------------------------|
| Workers - Systemic Effects | Acute - Oral         | Not determined or not applicable. |
|                            | Acute - Inhalation   | No hazard identified              |
|                            | Acute - Dermal       | No hazard identified              |
|                            | Chronic - Oral       | Not determined or not applicable. |
|                            | Chronic - Inhalation | 40.2 mg/m <sup>3</sup>            |
|                            | Chronic - Dermal     | 112 mg/kg bw/day                  |
| Workers - Local Effects    | Acute - Oral         | Not determined or not applicable. |
|                            | Acute - Inhalation   | No hazard identified              |
|                            | Acute - Dermal       | No hazard identified              |
|                            | Chronic - Oral       | Not determined or not applicable. |
|                            | Chronic - Inhalation | No hazard identified              |
|                            | Chronic - Dermal     | No hazard identified              |

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### 5X Rapid Ligation Buffer

|                                       |                      |                                   |
|---------------------------------------|----------------------|-----------------------------------|
| General Population - Systemic Effects | Acute - Oral         | No hazard identified              |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | 40 mg/kg bw/day                   |
|                                       | Chronic - Inhalation | 7.14 mg/m <sup>3</sup>            |
|                                       | Chronic - Dermal     | 40 mg/kg bw/day                   |
| General Population - Local Effect     | Acute - Oral         | Not determined or not applicable. |
|                                       | Acute - Inhalation   | No hazard identified              |
|                                       | Acute - Dermal       | No hazard identified              |
|                                       | Chronic - Oral       | Not determined or not applicable. |
|                                       | Chronic - Inhalation | No hazard identified              |
|                                       | Chronic - Dermal     | No hazard identified              |

#### Predicted No Effect Concentration (PNEC):

**Ingredient Name:** Tromethamine

**CAS #:** 77-86-1

| Environmental Protection Target    | PNEC                 |
|------------------------------------|----------------------|
| Fresh water                        | No hazard identified |
| Freshwater sediments               | No hazard identified |
| Marine water                       | No hazard identified |
| Marine sediments                   | No hazard identified |
| Microorganisms in sewage treatment | 300 mg/L             |
| Soil (agricultural)                | No hazard identified |
| Air                                | No hazard identified |
| Oral (Secondary Poisoning)         | No exposure expected |

**Ingredient Name:** Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated

**CAS #:** 25322-68-3

| Environmental Protection Target    | PNEC                   |
|------------------------------------|------------------------|
| Fresh water                        | 0.273 g/L              |
| Freshwater sediments               | 1030 mg/kg sediment dw |
| Marine water                       | 27.3 mg/L              |
| Marine sediments                   | 103 mg/kg sediment dw  |
| Microorganisms in sewage treatment | No hazard identified   |
| Soil (agricultural)                | 46.4 mg/kg soil dw     |
| Air                                | No hazard identified   |
| Oral (Secondary Poisoning)         | No exposure expected   |

#### Information on monitoring procedures:

Not determined or not applicable.

## 8.2 Exposure controls

#### Appropriate engineering controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

#### Personal protection equipment

**Eye and face protection:**

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Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

#### Skin and body protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

#### Respiratory protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

#### General hygienic measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

#### Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

|   |                                   |
|---|-----------------------------------|
| Product (substance / mixture) related measures to prevent exposure: | Not determined or not applicable. |
| Instruction measures to prevent exposure:                           | Not determined or not applicable. |
| Organisational measures to prevent exposure:                        | Not determined or not applicable. |
| Technical measures to prevent exposure:                             | Not determined or not applicable. |

#### Risk management measures to control exposure:

Not determined or not applicable.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                    |                                  |
|------------------------------------|----------------------------------|
| Physical State                     | Liquid                           |
| Color                              | Clear, colorless                 |
| Odor/Odor threshold                | None                             |
| pH                                 | 7.6                              |
| Melting point/freezing point       | Not determined or not available. |
| Initial boiling point/range        | Not determined or not available. |
| Flash point (closed cup)           | Not determined or not available. |
| Flammability                       | Not determined or not available. |
| Upper flammability/explosive limit | Not determined or not available. |
| Lower flammability/explosive limit | Not determined or not available. |
| Vapor pressure                     | Not determined or not available. |
| Relative vapor density             | Not determined or not available. |
| Density                            | Not determined or not available. |
| Relative density                   | Not determined or not available. |
| Solubilities                       | Not determined or not available. |

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|   |                                  |
|---|----------------------------------|
| Partition coefficient (n-octanol/water) | Not determined or not available. |
| Auto/Self-ignition temperature          | Not determined or not available. |
| Decomposition temperature               | Not determined or not available. |
| Kinematic viscosity                     | Not determined or not available. |
| Particle characteristics                | Not determined or not available. |

## 9.2 Other information

### 9.2.1 Information with regard to physical hazard classes

|   |                                  |
|---|----------------------------------|
| Explosives  | No data available/Not applicable |
| Flammable gases   | No data available/Not applicable |
| Aerosols  | No data available/Not applicable |
| Oxidizing gases   | No data available/Not applicable |
| Gases under pressure  | No data available/Not applicable |
| Flammable liquids   | No data available/Not applicable |
| Flammable solids  | No data available/Not applicable |
| Self-reactive substances and mixtures                                     | No data available/Not applicable |
| Pyrophoric liquids  | No data available/Not applicable |
| Pyrophoric solids   | No data available/Not applicable |
| Self-heating substances and mixtures                                      | No data available/Not applicable |
| Substances and mixtures, which emit flammable gases in contact with water | No data available/Not applicable |
| Oxidizing liquids   | No data available/Not applicable |
| Oxidizing solids  | No data available/Not applicable |
| Organic peroxides   | No data available/Not applicable |
| Corrosive to metals   | No data available/Not applicable |
| Desensitized explosives   | No data available/Not applicable |

### 9.2.2 Other safety characteristics

None.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity:

Not reactive under recommended handling and storage conditions.

### 10.2 Chemical stability:

Stable under recommended handling and storage conditions.

### 10.3 Possibility of hazardous reactions:

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

### 10.4 Conditions to avoid:

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

### 10.5 Incompatible materials:

Oxidizing agents

### 10.6 Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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### 5X Rapid Ligation Buffer

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

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

**Product data:** No data available.

**Substance data:**

| Name   | Route  | Result                |
|--|--------|-----------------------|
| Tromethamine   | oral   | LD50 Rat: >5000 mg/kg |
|  | dermal | LD50 Rat: >5000 mg/kg |
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | dermal | LD50 Rat: >2000 mg/kg |
|  | oral   | LD50 Rat: >2000 mg/kg |

#### Skin corrosion/irritation

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

**Product data:**

No data available.

**Substance data:**

| Name         | Result                  |
|--------------|-------------------------|
| Tromethamine | Causes skin irritation. |

#### Serious eye damage/irritation

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

**Product data:**

No data available.

**Substance data:**

| Name         | Result                         |
|--------------|--------------------------------|
| Tromethamine | Causes serious eye irritation. |

#### Respiratory or skin sensitization

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

**Product data:**

No data available.

**Substance data:** No data available.

#### Carcinogenicity

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

**Product data:** No data available.

**Substance data:** No data available.

**International Agency for Research on Cancer (IARC):** None of the ingredients are listed.

#### Germ cell mutagenicity

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

**Product data:** No data available.

**Substance data:** No data available.

#### Reproductive Toxicity

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

**Product data:**

No data available.

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**Substance data:** No data available.

#### Specific target organ toxicity (single exposure)

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

#### Product data:

No data available.

#### Substance data:

| Name         | Result                            |
|--------------|-----------------------------------|
| Tromethamine | May cause respiratory irritation. |

#### Specific target organ toxicity (repeated exposure)

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

#### Product data:

No data available.

**Substance data:** No data available.

#### Aspiration toxicity

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

#### Product data:

No data available.

**Substance data:** No data available.

#### Information on likely routes of exposure:

Inhalation; Ingestion; Skin contact; Eye contact

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

Refer to Section 4 of this SDS.

### 11.2 Information on other hazards

#### Endocrine disrupting properties:

**Substance data:** No data available.

#### Other information:

No data available.

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Acute (short-term) toxicity

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

**Product data:** No data available.

#### Substance data:

| Name   | Result   |
|--|--|
| Tromethamine   | Aquatic Invertebrates EC50 Daphnia magna: >980 mg/L (48 hr [mobility])                                   |
|  | Aquatic Plants EC50 Pseudokirchneriella subcapitata: 397 mg/L (72 hr [cell number])                      |
|  | Fish LC50 Freshwater fish: >4000 mg/L (96 hr)  |
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | Fish LC50 Poecilia reticulata: > 100 mg/L (96 hr)  |
|  | Aquatic Invertebrates EC50 Daphnia magna: > 100 mg/L (48 hr [mobility])                                  |
|  | Aquatic Plants EC50 Desmodesmus subspicatus: >100 mg/L (96 hr [growth rate, Read-across substance data]) |

#### Chronic (long-term) toxicity

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

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### 5X Rapid Ligation Buffer

**Product data:** No data available.

**Substance data:**

| Name   | Result   |
|--|--|
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | Fish NOEC Fish: 13,671.586 mg/L (28 d [mortality])<br>Aquatic Invertebrates NOEC Daphnia magna: 17,475.27 mg/L (21 d [immobilisation, Read-across substance data]) |

### 12.2 Persistence and degradability

**Product data:** No data available.

**Substance data:**

| Name   | Result  |
|--|---|
| Tromethamine   | Readily biodegradable in water (65.9% biodegradation in 28 days, measured by CO <sub>2</sub> evolution).                    |
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | The substance is readily biodegradable. 74.85% degradation in water, measured by O <sub>2</sub> consumption, after 28 days. |

### 12.3 Bioaccumulative potential

**Product data:** No data available.

**Substance data:**

| Name   | Result   |
|--|--|
| Tromethamine   | No significant bioaccumulation expected. Log Kow (aquatic species): -2.31  |
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | The substance is not expected to bioaccumulate (BCF: 3.162 L/kg, basis: whole body w.w., aquatic species at 25 °C and log Pow: 30 °C). |

### 12.4 Mobility in soil

**Product data:** No data available.

**Substance data:**

| Name   | Result   |
|--|--|
| Tromethamine   | Mobile in soil with a low potential for adsorption to soil and sediment. Koc at 20 °C: 75  |
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | The substance is mobile, therefore, there is low potential for adsorption to soil and sediment (log Koc:1.857 dimensionless at 25 °C). |

### 12.5 Results of PBT and vPvB assessment

**Product data:**

**PBT assessment:** This product does not contain any substances that are assessed to be a PBT.

**vPvB assessment:** This product does not contain any substances that are assessed to be a vPvB.

**Substance data:**

**PBT assessment:**

|  |                            |
|--|----------------------------|
| Tromethamine   | This substance is not PBT. |
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | The substance is not PBT.  |

**vPvB assessment:**

|              |                             |
|--------------|-----------------------------|
| Tromethamine | This substance is not vPvB. |
|--------------|-----------------------------|

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Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy-Ethane-1,2-diol, ethoxylated

The substance is not vPvB.

#### 12.6 Endocrine disrupting properties

**Substance data:** No data available.

#### 12.7 Other adverse effects: No data available.

#### 12.8 Hazard to the ozone layer

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

**Product data:** No data available.

**Substance data:** No data available.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### 13.1.1 Product / Packaging disposal:

Dispose of in accordance with all applicable local, regional, state and federal regulations.

**Waste codes / waste designations according to LoW:** Not determined or not available.

##### 13.1.2 Waste treatment-relevant information: Not determined or not available.

##### 13.1.3 Sewage disposal-relevant information: Not determined or not available.

##### 13.1.4 Other disposal recommendations: It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities

### SECTION 14: Transport information

#### International Carriage of Dangerous Goods by Road/Rail (ADR/RID)

|                               |               |
|-------------------------------|---------------|
| UN number or ID number        | Not regulated |
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |
| Special precautions for user  | None          |

#### International Carriage of Dangerous Goods by Inland Waterways (ADN)

|                               |               |
|-------------------------------|---------------|
| UN number or ID number        | Not regulated |
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |
| Special precautions for user  | None          |

#### International Maritime Dangerous Goods (IMDG)

|                               |               |
|-------------------------------|---------------|
| UN number or ID number        | Not regulated |
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |



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|                              |      |
|------------------------------|------|
| Special precautions for user | None |
|------------------------------|------|

#### International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

|                               |               |
|-------------------------------|---------------|
| UN number or ID number        | Not regulated |
| UN proper shipping name       | Not regulated |
| UN transport hazard class(es) | None          |
| Packing group                 | None          |
| Environmental hazards         | None          |
| Special precautions for user  | None          |

#### Maritime Transport in Bulk according to IMO Instruments

|                                 |      |
|---------------------------------|------|
| Bulk Name                       | None |
| Ship type                       | None |
| Pollution category              | None |
| IMO hazard class                | None |
| Environmental hazards           | None |
| Material hazardous only in bulk | None |
| Cargo Group                     | None |

### SECTION 15: Regulatory information

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

##### European regulations

##### Inventory listing (EINECS):

|            |  |            |
|------------|--|------------|
| 77-86-1    | Tromethamine   | Listed     |
| 25322-68-3 | Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | Not Listed |

**REACH SVHC candidate list:** None of the ingredients are listed.

**REACH SVHC Authorizations:** None of the ingredients are listed.

**REACH Restriction:** None of the ingredients are listed.

**Water hazard class (WGK) (Product):** Not determined.

##### Water hazard class (WGK) (Substance):

| Ingredient Name  | CAS        | Class   |
|--|------------|---|
| Tromethamine   | 77-86-1    | Water hazard class 1: slightly hazardous to water |
| Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy- Ethane-1,2-diol, ethoxylated | 25322-68-3 | Water hazard class 1: slightly hazardous to water |

##### Other regulations

**Germany TA Luft:** None of the ingredients are listed.

**Additional information:** Not determined.

#### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

### SECTION 16: Other information

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**Abbreviations and Acronyms:** None

#### Summary of classification(s) in section 3:

|                |  |
|----------------|--|
| Skin Irrit. 2  | Skin irritation, category 2  |
| STOT SE 3 (RI) | Specific target organ toxicity - single exposure, category 3, respiratory tract irritation |
| Eye Irrit. 2   | Eye Irritation, category 2   |

#### Summary of hazard statements in section 3:

|      |                                  |
|------|----------------------------------|
| H315 | Causes skin irritation           |
| H335 | May cause respiratory irritation |
| H319 | Causes serious eye irritation    |

#### Disclaimer:

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

Initial preparation date: 2024-05-14

#### Revision Notes:

|               |       |
|---------------|-------|
| Revision Date | Notes |
|---------------|-------|

**End of Safety Data Sheet**

## SAFETY DATA SHEET

# Equinox Amplification Master Mix (2X)

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

*Trade name:* Equinox Amplification Master Mix (2X)  
*Product no.:* Z0010

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

*Relevant identified uses of the substance or mixture:* Laboratory use  
Restricted to professional users.  
*Uses advised against:* in vivo

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

*Company and address:* **Watchmaker Genomics, Inc.**  
5744 Central Ave, Ste 100  
CO 80301 Boulder  
USA  
T: +1 720-543-2174  
*E-mail:* info@watchmakergenomics.com  
*Revision:* 23/04/2024  
*SDS Version:* 1.0

### 1.4. Emergency telephone number

In urgent situations: Call 112 and request the poison information centre. (24h service)  
Giftnotrufzentrale Berlin, Emergency telephone: +49 30 19240 (day and night)  
See also section 4 for first aid measures.

## SECTION 2: HAZARDS IDENTIFICATION

Classified according to Regulation (EC) No. 1272/2008 (CLP).

### 2.1. Classification of the substance or mixture

Acute Tox. 3; H301, Toxic if swallowed.  
STOT SE 2; H371, May cause damage to organs.

### 2.2. Label elements

*Hazard pictogram(s):*



*Signal word:*

Danger

*Hazard statement(s):*

Toxic if swallowed. (H301)  
May cause damage to organs. (H371)

*Precautionary statement(s):*

|                              |  |
|------------------------------|--|
| <i>General:</i>              | -  |
| <i>Prevention:</i>           | Do not breathe vapour/mist. (P260)<br>Wash hands and exposed skin thoroughly after handling. (P264)  |
| <i>Response:</i>             | IF SWALLOWED: Immediately call a POISON CENTER/doctor. (P301+P310)<br>Specific treatment (see instructions on this label). (P321)<br>Rinse mouth. (P330) |
| <i>Storage:</i>              | -  |
| <i>Disposal:</i>             | Dispose of contents/container in accordance with local regulation (P501)   |
| <i>Hazardous substances:</i> | Tetramethylammonium chloride   |
| <i>Additional labelling:</i> | Not applicable.  |

### 2.3. Other hazards

|                             |  |
|-----------------------------|--|
| <i>Additional warnings:</i> | This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.<br>This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. |
|-----------------------------|--|

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Not applicable. This product is a mixture.

### 3.2. Mixtures

| Product/substance            | Identifiers   | % w/w  | Classification  | Note |
|------------------------------|---|--------|---|------|
| Glycerol                     | CAS No.: 56-81-5<br>EC No.: 200-289-5<br>REACH: 01-2119471987-18-XXXX<br>Index No.: | 15-25% |   |      |
| Tromethamine                 | CAS No.: 77-86-1<br>EC No.: 201-064-4<br>REACH: 01-2119957659-16-XXXX<br>Index No.: | 3-5%   |   |      |
| Tetramethylammonium chloride | CAS No.: 75-57-0<br>EC No.: 200-880-8<br>REACH: 01-2119970924-26-XXXX<br>Index No.: | 1-3%   | Acute Tox. 2, H300<br>Acute Tox. 3, H311<br>Skin Irrit. 2, H315<br>STOT SE 1, H370 (Central nervous system) |      |

|  |  |  |                         |  |
|--|--|--|-------------------------|--|
|  |  |  | Aquatic Chronic 2, H411 |  |
|--|--|--|-------------------------|--|

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

## Other information

-

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

#### *General information:*

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

#### *Inhalation:*

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

#### *Skin contact:*

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

#### *Eye contact:*

If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

#### *Ingestion:*

In the case of ingestion, contact a doctor immediately. If the person is conscious, give them water. DO NOT try to induce vomiting unless this is recommended by a doctor. Hold head facing down to prevent vomit from returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

#### *Burns:*

Not applicable.

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

None known.

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

IF exposed or concerned:

Get immediate medical advice/attention.

## Information to medics

Bring this safety data sheet or the label from this product.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

Not applicable.

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

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Halogenated compounds

Nitrogen oxides (NO<sub>x</sub>)

Carbon oxides (CO / CO<sub>2</sub>)

### 5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Avoid direct contact with spilled substances.

Ensure adequate ventilation, especially in confined areas.

Contaminated areas may be slippery.

### 6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.

Keep unauthorized persons away from the spill

### 6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

### 6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

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

Containers that have been opened must be carefully resealed and kept upright to prevent

leakage.

Joint storage is permitted for products in storage classes: 2B, 6.1A, 6.1B, 6.1C, 6.1D, 8A, 8B, 10, 11, 12, 13

May only be stored together products in storage classes: 3, 4.1B, 4.2, 4.3, 5.1B provided that this will not lead to a substantial increase in risk. A substantial increase in risk can be prevented through separate storage.

Joint storage is NOT allowed for products in all other storage classes.

*Recommended storage material:*

Keep only in original packaging.

*Storage class:*

Storage class 6.1 D (Non-combustible acutely toxic substances or substances with chronic effects).  
 TRGS 510 - Storage of hazardous substances in non-stationary containers.

*Storage temperature:*

-25 °C to -15 °C

*Incompatible materials:*

No specific requirements

### 7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Glycerol

Long term exposure limit (8 hours) (mg/m<sup>3</sup>): 200 (Einatembare Fraktion)

Short term exposure limit (15 minutes) (mg/m<sup>3</sup>): 400 (Einatembare Fraktion)

Category for short-term values: I

Annotations:

DFG = Senate Commission for the examination of Harmful working materials of the DFG (MAK Commission)

Y = No risk of fetal damage is to be feared if the occupational exposure limit (OEL) value and the biological limit value (BLV) are adhered to.

Technical requirements for hazardous substances, workplace exposure limits, TRGS 900 (Jan. 2006)

### DNEL

Glycerol

| Duration:                           | Route of exposure: | DNEL:                 |
|-------------------------------------|--------------------|-----------------------|
| Long term – Local effects - Workers | Inhalation         | 220 mg/m <sup>3</sup> |

Tetramethylammonium chloride

| Duration:   | Route of exposure: | DNEL:                  |
|---|--------------------|------------------------|
| Long term – Systemic effects - General population | Dermal             | 250 µg/kgbw/day        |
| Long term – Systemic effects - Workers            | Dermal             | 400 µg/kgbw/day        |
| Long term – Systemic effects - General population | Inhalation         | 1.76 mg/m <sup>3</sup> |
| Long term – Systemic effects - Workers            | Inhalation         | 2.9 mg/m <sup>3</sup>  |
| Long term – Systemic effects - General population | Oral               | 250 µg/kgbw/day        |

Tromethamine

| Duration: | Route of exposure: | DNEL: |
|-----------|--------------------|-------|
|-----------|--------------------|-------|

|  |            |                         |
|--|------------|-------------------------|
| Long term – Systemic effects - Workers | Dermal     | 166.7 mg/kg bw/day      |
| Long term – Systemic effects - Workers | Inhalation | 117.5 mg/m <sup>3</sup> |

## PNEC

### Glycerol

| Route of exposure:     | Duration of Exposure: | PNEC: |
|------------------------|-----------------------|-------|
| Sewage treatment plant |                       | 1 g/L |

### Tetramethylammonium chloride

| Route of exposure:                | Duration of Exposure: | PNEC:     |
|-----------------------------------|-----------------------|-----------|
| Freshwater                        |                       | 600 ng/L  |
| Freshwater sediment               |                       | 35 µg/kg  |
| Intermittent release (freshwater) |                       | 36 µg/L   |
| Marine water                      |                       | 60 ng/L   |
| Marine water sediment             |                       | 3.5 µg/kg |
| Sewage treatment plant            |                       | 6 mg/L    |
| Soil                              |                       | 6.6 µg/kg |

### Tromethamine

| Route of exposure:     | Duration of Exposure: | PNEC:    |
|------------------------|-----------------------|----------|
| Sewage treatment plant |                       | 300 mg/L |

## 8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

### General recommendations:

When handling chemical products, do not eat, drink or smoke.

### Exposure scenarios:

There are no exposure scenarios implemented for this product.

### Exposure limits:

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

### Appropriate technical measures:

The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked. Apply standard precautions during use of the product. Avoid inhalation of vapours.

### Hygiene measures:

Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse.

### Measures to avoid environmental exposure:

Keep damming materials near the workplace. If possible, collect spillage during work.

## Individual protection measures, such as personal protective equipment

### Generally:

Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the



applicable workplace exposure limits, while observing recognized national standards (or equivalent).

**Respiratory Equipment:**

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

**Skin protection:**

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent). Appropriate techniques should be used to remove used gloves and contaminated clothing.

**Hand protection:**

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves.

**Eye protection:**

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

|                                    |                   |
|------------------------------------|-------------------|
| <i>Physical state:</i>             | Liquid            |
| <i>Colour:</i>                     | Clear             |
| <i>Odour / Odour threshold:</i>    | Mild              |
| <i>pH:</i>                         | 8.5               |
| <i>Density (g/cm<sup>3</sup>):</i> | No data available |
| <i>Relative density:</i>           | No data available |
| <i>Kinematic viscosity:</i>        | No data available |
| <i>Particle characteristics:</i>   | No data available |

#### Phase changes

|   |                            |
|---|----------------------------|
| <i>Melting point/Freezing point (°C):</i>             | No data available          |
| <i>Softening point/range (waxes and pastes) (°C):</i> | Does not apply to liquids. |
| <i>Boiling point (°C):</i>                            | No data available          |
| <i>Vapour pressure:</i>                               | No data available          |
| <i>Relative vapour density:</i>                       | No data available          |
| <i>Decomposition temperature (°C):</i>                | No data available          |

#### Data on fire and explosion hazards

|   |  |
|---|--|
| <i>Flash point (°C):</i>                        | No data available                                      |
| <i>Flammability (°C):</i>                       | No data available                                      |
| <i>Auto-ignition temperature (°C):</i>          | No data available                                      |
| <i>Lower and upper explosion limit (% v/v):</i> | Testing not relevant or not possible due to the nature |

of the product.

### Solubility

|  |                   |
|--|-------------------|
| <i>Solubility in water:</i>                  | No data available |
| <i>n-octanol/water coefficient (LogKow):</i> | No data available |
| <i>Solubility in fat (g/L):</i>              | No data available |

### 9.2. Other information

|   |                    |
|---|--------------------|
| <i>Evaporation rate (n-butylacetate = 100):</i> | No data available  |
| <i>Other physical and chemical parameters:</i>  | No data available. |
| <i>Oxidizing properties:</i>                    | No data available  |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Not reactive under recommended handling and storage conditions.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous reactions are not anticipated under recommended conditions of handling and storage.

### 10.4. Conditions to avoid

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

### 10.5. Incompatible materials

No specific requirements

### 10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

|                    |             |
|--------------------|-------------|
| Product/substance  | Glycerol    |
| Species:           | Rat         |
| Route of exposure: | Oral        |
| Test:              | LD50        |
| Result:            | 12600 mg/kg |

Toxic if swallowed.

#### Skin corrosion/irritation

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

#### Serious eye damage/irritation

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

#### Respiratory sensitisation

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

#### 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 damage to organs.

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**11.2. Information on other hazards****Long term effects**

None known.

**Endocrine disrupting properties**

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

**Other information**

None known.

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**SECTION 12: ECOLOGICAL INFORMATION**

---

**12.1. Toxicity**

|                   |  |
|-------------------|--|
| Product/substance | Glycerol                                       |
| Species:          | Fish   |
| Test:             | LC50   |
| Result:           | 51 - 57 mL/L, 96h static (Oncorhynchus mykiss) |

**12.2. Persistence and degradability**

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

**12.3. Bioaccumulative potential**

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

**12.4. Mobility in soil**

No data available.

**12.5. Results of PBT and vPvB assessment**

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

**12.6. Endocrine disrupting properties**

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

**12.7. Other adverse effects**

This product contains substances that are toxic to the environment. May result in adverse effects to aquatic organisms.

This product contains substances, which may cause adverse long-term effects to the aquatic environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

Product is covered by the regulations on hazardous waste.

HP 5 - Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP 6 - Acute toxicity

Dispose of contents/container to an approved waste disposal plant.

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

EWC code:

Not applicable.

### Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

## SECTION 14: TRANSPORT INFORMATION

|      | 14.1<br>UN / ID | 14.2<br>UN proper shipping name | 14.3<br>Hazard class(es)     | 14.4<br>PG* | 14.5<br>Env** | Other<br>information:                 |
|------|-----------------|---------------------------------|------------------------------|-------------|---------------|---------------------------------------|
| ADR  | Not regulated   | -                               | Transport hazard class: None | None        | No            | See below for additional information. |
| IMDG | Not regulated   | -                               | Transport hazard class: None | None        | No            | See below for additional information. |
| IATA | Not regulated   | -                               | Transport hazard class: None | None        | No            | See below for additional information. |

\* Packing group

\*\* Environmental hazards

### Additional information

Not dangerous goods according to ADR, IATA and IMDG.

### 14.6. Special precautions for user

Not applicable.

### 14.7. Maritime transport in bulk according to IMO instruments

No data available.

## SECTION 15: REGULATORY INFORMATION

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

Restrictions for application:

Restricted to professional users.

People under the age of 18 shall not be exposed to this

*Demands for specific education:*  
*SEVESO - Categories / dangerous substances:*

*Additional information:*

*Sources:*

product.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

No specific requirements.

Not applicable.

WGK class: WGK 1

Law for the Protection of Working Youth (Youth Employment Protection Act - JArbSchG).

Law on the protection of mothers at work, in training and in studies (Mutterschutzgesetz - MuSchG) 23.05.2017 (BGBl. I S. 1228).

Commission Regulation (EU) No 1357/2014 of 18 December 2014 on waste.

Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP).

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

## 15.2. Chemical safety assessment

No

## SECTION 16: OTHER INFORMATION

### Full text of H-phrases as mentioned in section 3

H300, Fatal if swallowed.

H311, Toxic in contact with skin.

H315, Causes skin irritation.

H370, Causes damage to organs. (Central nervous system)

H411, Toxic to aquatic life with long lasting effects.

### Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CE = Conformité Européenne (European conformity)

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CSA = Chemical Safety Assessment

CSR = Chemical Safety Report

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level  
EINECS = European Inventory of Existing Commercial chemical Substances  
ES = Exposure Scenario  
EUH statement = CLP-specific Hazard statement  
EuPCS = European Product Categorisation System  
EWC = European Waste Catalogue  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer (IARC)  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
PNEC = Predicted No Effect Concentration  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
RRN = REACH Registration Number  
SCL = A specific concentration limit  
SVHC = Substances of Very High Concern  
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
STOT-SE = Specific Target Organ Toxicity - Single Exposure  
TWA = Time weighted average  
UN = United Nations  
UVBC = Unknown or variable composition, complex reaction products or of biological materials  
VOC = Volatile Organic Compound  
vPvB = Very Persistent and Very Bioaccumulative

**Additional information**

The classification of the mixture in regard of health hazards is in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP).

**The safety data sheet is validated by**

Watchmaker Genomics, Inc.

**Other**

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.

Information in this safety data sheet cannot be used as a product specification.

Country-language: DE-en

This product has been classified in accordance with EC No. 1272/2008 (CLP), as amended by Commission Regulation (EU) 2019/521 and Commission Delegated Regulation (EU) 2020/217, and EC No. 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation, and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.