Safety Data Sheet

Cat. # BE-412

Protein Degradation Study

Size: For 6 groups of 4-5 or 24-30 students.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : LabSafe Gel Blue
Product code : 001L_P041
Product group : Trade product

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

1.2.1. Relevant identified uses

Main use category : Research purposes

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number : Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre)</td>
<td>Grosvenor Road BT12 6BA Belfast</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Royal Victoria Hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre)</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>City Hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gwendyn Ward, Llandough Hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Royal Infirmary of Edinburgh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit,</td>
<td>Avonley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guy's &amp; St Thomas' Hospital Trust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre)</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

EUH-statements : EUH210 - Safety data sheet available on request.

2.3. Other hazards

No additional information available
SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>&gt; 91</td>
<td>Not classified</td>
</tr>
<tr>
<td>citric acid</td>
<td>(CAS-No.) 77-92-9 (EC-No.) 201-069-1</td>
<td>&lt;= 5</td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>methanol</td>
<td>(CAS-No.) 67-56-1 (EC-No.) 200-659-6</td>
<td>&lt; 2</td>
<td>Flam. Liq. 2, H225, Acute Tox. 3 (Oral), H301, Acute Tox. 3 (Inhalation), H331, Acute Tox. 3 (Inhalation:vapour), H331, STOT SE 1, H370</td>
</tr>
<tr>
<td>Coomassie Brilliant Blue G 250 Dye</td>
<td>(CAS-No.) 6104-58-1 (EC-No.) 228-058-4</td>
<td>&lt; 2</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319, STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Specific concentration limits:

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>Specific concentration limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>methanol</td>
<td>(CAS-No.) 67-56-1 (EC-No.) 200-659-6</td>
<td>(3 =&lt;C &lt; 10) STOT SE 2, H371, (10 =&lt;C &lt; 100) STOT SE 1, H370</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: In all cases of doubt, or when symptoms persist, seek medical attention.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Rinse eyes with water as a precaution.
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
No additional information available

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

SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media: Container may slop over if solid jet (water/foam) is applied. No dry chemical powder. Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Combustible liquid.
Explosion hazard: No data available on direct explosion hazard. No data available on indirect explosion hazard.
Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: consider evacuation. Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows. Exposure to fire/heat: seal off low-lying areas.
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Emergency procedures: Ventilate spillage area. No open flames, no sparks, and no smoking.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

methanol (67-56-1)

EU - Occupational Exposure Limits

IOELV TWA (mg/m³) 260 mg/m³

IOELV TWA (ppm) 200 ppm

United Kingdom - Occupational Exposure Limits

WEL TWA (mg/m³) 266 mg/m³

WEL TWA (ppm) 200 ppm

WEL STEL (mg/m³) 333 mg/m³

WEL STEL (ppm) 250 ppm

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment
Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Blue</td>
</tr>
<tr>
<td>Odour</td>
<td>None</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>85 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
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</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information
11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
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</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

methanol (67-56-1)

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>1187 - 2769 mg/kg bodyweight (BASF test, Rat, Male / female, Weight of evidence, Aqueous solution, Oral, 7 day(s))</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>17100 mg/kg (Rabbit, Inconclusive, insufficient data, Dermal)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>128.2 mg/l air (BASF test, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours))</td>
</tr>
</tbody>
</table>
**LabSafe Gel Blue**  
**Safety Data Sheet**  
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 oral</th>
<th>LD50 dermal rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>citric acid (77-92-9)</td>
<td>5400 mg/kg bodyweight (Equivalent or similar to OECD 401, Mouse, Male / female, Experimental value, Oral, 10 day(s))</td>
<td>&gt; 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified  
Serious eye damage/irritation: Not classified  
Respiratory or skin sensitisation: Not classified  
Germ cell mutagenicity: Not classified  
Reproductive toxicity: Not classified  
STOT-single exposure: Not classified  
STOT-repeated exposure: Not classified  
Aspiration hazard: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

**Ecology - general**: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

**Acute aquatic toxicity**: Not classified  
**Chronic aquatic toxicity**: Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
<th>ErC50 (algae)</th>
</tr>
</thead>
<tbody>
<tr>
<td>methanol (67-56-1)</td>
<td>15400 mg/l (EPA 660/3 - 75/009, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Lethal)</td>
<td>18260 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 96 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Locomotor effect)</td>
<td>22000 mg/l (OECD 201: Alga, Growth Inhibition Test, 96 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>citric acid (77-92-9)</td>
<td>440 - 760 mg/l (Equivalent or similar to OECD 203, 48 h, Leuciscus idus, Static system, Fresh water, Experimental value, Nominal concentration)</td>
<td>Readily biodegradable in the soil. Readily biodegradable in water.</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>methanol (67-56-1)</td>
<td>Readily biodegradable in the soil. Readily biodegradable in water.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.6 - 1.12 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>1.42 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>1.5 g O₂/g substance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>BCF fish 1</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commaassie Brilliant Blue G 250 Dye (6104-58-1)</td>
<td>1 - 4.5 (72 h, Cyprinus carpio, Static system, Fresh water, Experimental value)</td>
<td>-0.77 (Experimental value)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Persistence and degradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>methanol (67-56-1)</td>
<td>Biodegradable in the soil. Readily biodegradable in water.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.42 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>0.728 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>0.686 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.89 (20 day(s), Literature study)</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential
LabSafe Gel Blue
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Bioaccumulative potential: Low potential for bioaccumulation (BCF < 500).

Coomassie Brilliant Blue G 250 Dye (6104-58-1)
Bioaccumulative potential: No bioaccumulation data available.

citric acid (77-92-9)
BCF other aquatic organisms 1: 3.2 (Other, Calculated value)
Log Pow: -1.8 - -1.55 (Experimental value)
Bioaccumulative potential: Not bioaccumulative.

12.4. Mobility in soil
methanol (67-56-1)
Surface tension: 0.023 N/m (20 °C)
Log Koc: 0.088 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil: Highly mobile in soil.

citric acid (77-92-9)
Ecology - soil: No (test)data on mobility of the substance available.

12.5. Results of PBT and vPvB assessment
 Component
methanol (67-56-1): This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
citric acid (77-92-9): This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects
No additional information available.

SECTION 13: Disposal considerations
13.1. Waste treatment methods

SECTION 14: Transport information
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR): Not regulated
UN-No. (IMDG): Not regulated
UN-No. (IATA): Not regulated
UN-No. (ADN): Not regulated
UN-No. (RID): Not regulated

14.2. UN proper shipping name
Proper Shipping Name (ADR): Not regulated
Proper Shipping Name (IMDG): Not regulated
Proper Shipping Name (IATA): Not regulated
Proper Shipping Name (ADN): Not regulated
Proper Shipping Name (RID): Not regulated

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR): Not regulated

IMDG
Transport hazard class(es) (IMDG): Not regulated

IATA
Transport hazard class(es) (IATA): Not regulated

ADN
Transport hazard class(es) (ADN): Not regulated
**LabSafe Gel Blue**

**Safety Data Sheet**

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### RID

| Transport hazard class(es) (RID) | Not regulated |

#### 14.4. Packing group

| Packing group (ADR) | Not regulated |
| Packing group (IMDG) | Not regulated |
| Packing group (IATA) | Not regulated |
| Packing group (ADN) | Not regulated |
| Packing group (RID) | Not regulated |

#### 14.5. Environmental hazards

| Dangerous for the environment | No |
| Marine pollutant | No |
| Other information | No supplementary information available |

#### 14.6. Special precautions for user

- **Overland transport**
  Not regulated
- **Transport by sea**
  Not regulated
- **Air transport**
  Not regulated
- **Inland waterway transport**
  Not regulated
- **Rail transport**
  Not regulated

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

### SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

- Contains no REACH substances with Annex XVII restrictions
- Contains no substance on the REACH candidate list
- Contains no REACH Annex XIV substances

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

### SECTION 16: Other information

**Full text of H- and EUH-statements:**

- **Acute Tox. 3 (Inhalation)**
  Acute toxicity (inhal.), Category 3
- **Acute Tox. 3 (Inhalation:vapour)**
  Acute toxicity (inhalation:vapour) Category 3
- **Acute Tox. 3 (Oral)**
  Acute toxicity (oral), Category 3
- **Eye Irrit. 2**
  Serious eye damage/eye irritation, Category 2
- **Flam. Liq. 2**
  Flammable liquids, Category 2
- **Skin Irrit. 2**
  Skin corrosion/irritation, Category 2
- **STOT SE 1**
  Specific target organ toxicity — Single exposure, Category 1
- **STOT SE 2**
  Specific target organ toxicity — Single exposure, Category 2
- **STOT SE 3**
  Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
- **H225**
  Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H370 Causes damage to organs.
H371 May cause damage to organs.
EUH210 Safety data sheet available on request.

Safety Data Sheet applicable for regions: GB - United Kingdom

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>PAGE: Sample Loading Buffer (2X)</td>
</tr>
<tr>
<td>Product code</td>
<td>P141</td>
</tr>
<tr>
<td>Product group</td>
<td>Blend</td>
</tr>
</tbody>
</table>

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

1.2.1. Relevant identified uses

Main use category: Research purposes

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

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**SECTION 2: Hazards identification**

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

**Adverse physicochemical, human health and environmental effects**

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

EUH-statements: EUH210 - Safety data sheet available on request.

2.3. Other hazards

No additional information available

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

3.1. Substances

Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>50 - 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>glycerol</td>
<td>(CAS-No.) 56-81-5 (EC-No.) 200-289-5</td>
<td>10 - 50</td>
<td>Not classified</td>
</tr>
<tr>
<td>sodium dodecyl sulphate</td>
<td>(CAS-No.) 151-21-3 (EC-No.) 205-788-1</td>
<td>2 - 5</td>
<td>Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>Bromophenol blue</td>
<td>(CAS-No.) 115-39-9 (EC-No.) 204-086-2</td>
<td>0.5 - 2</td>
<td>Not classified</td>
</tr>
<tr>
<td>tris(2-carboxyethyl)phosphine hydrochloride</td>
<td>(CAS-No.) 51805-45-9</td>
<td>0.5 - 2</td>
<td>Skin Corr. 1B, H314</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16
**SECTION 4: First aid measures**

### 4.1. Description of first aid measures

**First-aid measures general**

**First-aid measures after inhalation**
- Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

**First-aid measures after skin contact**
- Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
- Take victim to a doctor if irritation persists. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid.

**First-aid measures after eye contact**
- Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

**First-aid measures after ingestion**
- Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

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

**Symptoms/effects after inhalation**
- Coughing. ON HEATING: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

**Symptoms/effects after skin contact**
- Dry skin.

**Symptoms/effects after eye contact**
- Slight irritation.

**Symptoms/effects after ingestion**

**Chronic symptoms**
- No effects known.

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

Treat symptomatically.

**SECTION 5: Firefighting measures**

### 5.1. Extinguishing media

**Suitable extinguishing media**

**Unsuitable extinguishing media**
- Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

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

**Fire hazard**
- DIRECT FIRE HAZARD: Combustible. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

**Explosion hazard**
- INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard".

**Hazardous decomposition products in case of fire**
- Toxic fumes may be released.

### 5.3. Advice for firefighters

**Precautionary measures fire**
- Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

**Firefighting instructions**
- Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray.

**Protection during firefighting**
- Heat/fire exposure: compressed air/oxygen apparatus.

**SECTION 6: Accidental release measures**

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

#### 6.1.1. For non-emergency personnel

**Protective equipment**
- Gloves. Protective clothing.

**Emergency procedures**
- Mark the danger area. No naked flames. Wash contaminated clothes. In case of reactivity hazard: consider evacuation.

#### 6.1.2. For emergency responders

**Protective equipment**
- Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

**Avoid release to the environment.**

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

**For containment**
- Contain released product, pump into suitable containers. Plug the leak, cut off the supply.
Methods for cleaning up:

Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite, kieselguhr, powdered limestone. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information:

Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures:

Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities:

Store in a well-ventilated place. Keep cool.

Storage conditions:

RT

Storage temperature:

RT

7.3. Specific end use(s):

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters:

glycerol (56-81-5)

United Kingdom - Occupational Exposure Limits

WEL TWA (mg/m³) 10 mg/m³

8.2. Exposure controls:

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties:

Physical state: Liquid

Colour: Blue.

Odour: Odourless.

Odour threshold: No data available

pH: No data available

Relative evaporation rate (butylacetate=1): No data available

Melting point: Not applicable

Freezing point: No data available

Boiling point: No data available

Flash point: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Flammability (solid, gas): Not applicable

Vapour pressure: No data available

Relative vapour density at 20 °C: No data available
Relative density: No data available
Solubility: No data available
Log Pow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: No data available

9.2 Other information
No additional information available

SECTION 10: Stability and reactivity

10.1 Reactivity
Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Reacts with (some) acids: (increased) risk of fire/explosion. May polymerize on exposure to temperature rise.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4 Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5 Incompatible materials
No additional information available

10.6 Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 Oral rat</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation rat (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol (56-81-5)</td>
<td>27200 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Female, Experimental value, Oral)</td>
<td>56750 mg/kg (4 day(s), Guinea pig, Male / female, Experimental value, Dermal, 14 day(s))</td>
<td>&gt; 2.75 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Converted value, Inhalation (vapours))</td>
</tr>
<tr>
<td>sodium dodecyl sulphate (151-21-3)</td>
<td>1200 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))</td>
<td>&lt; 2000 mg/kg (Rat; Literature study)</td>
<td>&gt; 2000 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Read-across, Dermal, 14 day(s))</td>
</tr>
<tr>
<td>tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)</td>
<td>3500 mg/kg (Rat, Oral)</td>
<td>3500 mg/kg (Rat, Dermal)</td>
<td>3500 mg/kg (Rat, Dermal)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
### SECTION 12: Ecological information

#### 12.1. Toxicity

**Ecology - general:** The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

**Acute aquatic toxicity**: Not classified

**Chronic aquatic toxicity**: Not classified

**Glycerol (56-81-5)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>54000 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Lethal)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>&gt; 10000 mg/l (24 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)</td>
</tr>
</tbody>
</table>

**Sodium dodecyl sulphate (151-21-3)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 72h algae (1)</td>
<td>&gt; 120 mg/l (DIN 38412-9, Scenedesmus subspicatus, Static system, Fresh water, Experimental value, Growth rate)</td>
</tr>
<tr>
<td>EC50 72h algae (2)</td>
<td>53 mg/l (DIN 38412-9, Scenedesmus subspicatus, Static system, Fresh water, Experimental value, Biomass)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

**Glycerol (56-81-5)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable in water.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.87 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>1.16 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>1.217 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.71</td>
</tr>
</tbody>
</table>

**Sodium dodecyl sulphate (151-21-3)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable in water.</td>
</tr>
</tbody>
</table>

**Bromophenol blue (115-39-9)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradable in the soil. Not readily biodegradable in water.</td>
</tr>
</tbody>
</table>

**Tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability in water: no data available.</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

**Glycerol (56-81-5)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>-1.75 (Experimental value, Equivalent or similar to OECD 107, 25 °C)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

**Sodium dodecyl sulphate (151-21-3)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>3.9 - 5.3 (72 h, Cyprinus carpio)</td>
</tr>
<tr>
<td>BCF fish 2</td>
<td>7.15 (Piscis, Chronic)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>&lt;= -2.03 (Calculated, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

**Bromophenol blue (115-39-9)**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>14000 (Piscis, Literature study, Calculated value)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>6.77 (Estimated value, KOWWIN)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>High potential for bioaccumulation (BCF &gt; 5000).</td>
</tr>
</tbody>
</table>
### Bioaccumulative potential

**tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)**

No bioaccumulation data available.

### Mobility in soil

**glycerol (56-81-5)**

- **Surface tension**: 0.0634 N/m (20 °C, 1000 g/l)
- **Ecology - soil**: No (test)data on mobility of the substance available.

**sodium dodecyl sulphate (151-21-3)**

- **Surface tension**: 0.0252 N/m (23 °C, 1 g/l, EU Method A.5: Surface tension)
- **Log Koc**: 1.545 (log Koc, SRC PCKOCWIN v2.0, Experimental value)
- **Ecology - soil**: Highly mobile in soil.

**Bromophenol blue (115-39-9)**

- **Log Koc**: 5.165 - 6.185 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
- **Ecology - soil**: Adsorbs into the soil.

### Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>PBT criteria</th>
<th>vPvB criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol (56-81-5)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>sodium dodecyl sulphate (151-21-3)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Bromophenol blue (115-39-9)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### Other adverse effects

No additional information available.

### Disposal considerations

#### Waste treatment methods

- **Product/Packaging disposal recommendations**: Do not discharge into surface water. Remove waste in accordance with local and/or national regulations. Recycle by distillation. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.
- **Additional information**: Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
- **European List of Waste (LoW) code**: 15 01 02 - plastic packaging, 15 01 04 - metallic packaging, 15 01 07 - glass packaging, 16 03 06 - organic wastes other than those mentioned in 16 03 05.

### Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### UN number

<table>
<thead>
<tr>
<th>UN-No. (ADR)</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN-No. (ADN)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (RID)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### UN proper shipping name

| Proper Shipping Name (ADR) | Not applicable |
| Proper Shipping Name (IMDG) | Not regulated |
| Proper Shipping Name (IATA) | Not regulated |
| Proper Shipping Name (ADN)  | Not applicable |
| Proper Shipping Name (RID)  | Not applicable |

#### Transport hazard class(es)

| ADR | Transport hazard class(es) (ADR) | Not applicable |
14.4. Packing group
Packing group (ADR) : Not applicable
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
No data available

Transport by sea
Not regulated

Air transport
Not regulated

Inland waterway transport
No data available

Rail transport
No data available

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

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations
No additional information available

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal) Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral) Acute toxicity (oral), Category 4
Eye Irrit. 2 Serious eye damage/eye irritation, Category 2
Skin Corr. 1B Skin corrosion/irritation, Category 1B
Skin Irrit. 2 Skin corrosion/irritation, Category 2
### Sample Loading Buffer (2X)

**Safety Data Sheet**

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>EUH210</td>
<td>Safety data sheet available on request.</td>
</tr>
</tbody>
</table>

**Safety Data Sheet applicable for regions**: GB - United Kingdom

**SDS EU (REACH Annex II)**

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*
## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

- **Product form**: Mixture
- **Product name**: Protease: Protease-K
- **Product code**: P361
- **Product group**: Blend

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

#### 1.2.1. Relevant identified uses
No additional information available

#### 1.2.2. Uses advised against
No additional information available

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

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

### 1.4. Emergency telephone number

- **Emergency number**: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture


Not classified

**Adverse physicochemical, human health and environmental effects**

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

### 2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>&gt;= 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>glycerol</td>
<td>(CAS-No.) 56-81-5</td>
<td>0.5 - 2</td>
<td>Not classified</td>
</tr>
<tr>
<td>tris(hydroxymethyl)aminomethane</td>
<td>(CAS-No.) 77-86-1</td>
<td>&lt; 0.05</td>
<td>Not classified</td>
</tr>
<tr>
<td>Proteinase K, Lyophilized</td>
<td>(CAS-No.) 39450-01-6</td>
<td>&lt; 0.05</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319, Resp. Sens. 1, H334, STOT SE 3, H335</td>
</tr>
<tr>
<td>calcium chloride, dihydrate</td>
<td>(CAS-No.) 10035-04-8</td>
<td>&lt; 0.05</td>
<td>Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16
SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation:
Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact:
Wash skin with plenty of water.

First-aid measures after eye contact:
Rinse eyes with water as a precaution.

First-aid measures after ingestion:
Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire:
Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting:
Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures:
Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment:
Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up:
Take up liquid spill into absorbent material.

Other information:
Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling:
Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures:
Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions:
Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Proteinase K, Lyophilized (39450-01-6)

United Kingdom - Occupational Exposure Limits

WEL TWA (mg/m³):
0.00004 mg/m³

glycerol (56-81-5)

United Kingdom - Occupational Exposure Limits

WEL TWA (mg/m³):
10 mg/m³

8.2. Exposure controls

Appropriate engineering controls:
Ensure good ventilation of the work station.
Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
### Protease: Protease-K

Safety Data Sheet  
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Acute toxicity (dermal)</th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

#### tris(hydroxymethyl)aminomethane (77-86-1)

<table>
<thead>
<tr>
<th>LD50 oral rat</th>
<th>&gt; 5000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Female, Experimental value, Oral, 14 day(s))</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 5000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)</td>
</tr>
</tbody>
</table>

#### calcium chloride, dihydrate (10035-04-8)

<table>
<thead>
<tr>
<th>LD50 oral rat</th>
<th>2301 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 5000 mg/kg bodyweight (Other, 24 h, Rabbit, Male / female, Experimental value, Dermal)</td>
</tr>
</tbody>
</table>

#### glycerol (56-81-5)

<table>
<thead>
<tr>
<th>LD50 oral rat</th>
<th>27200 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Female, Experimental value, Oral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal</td>
<td>56750 mg/kg (4 day(s), Guinea pig, Male / female, Experimental value, Dermal, 14 day(s))</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 2.75 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Converted value, Inhalation (vapours))</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

### SECTION 12: Ecological information

#### 12.1. Toxicity

**Ecology - general:** The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

**Acute aquatic toxicity:** Not classified

**Chronic aquatic toxicity:** Not classified

<table>
<thead>
<tr>
<th>tris(hydroxymethyl)aminomethane (77-86-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>EC50 72h algae (1)</td>
</tr>
</tbody>
</table>

#### calcium chloride, dihydrate (10035-04-8)

<table>
<thead>
<tr>
<th>LC50 fish 1</th>
<th>10650 mg/l (96 h, Lepomis macrochirus, Literature study, Anhydrous form)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>144 mg/l (48 h, Daphnia magna, Literature study, Anhydrous form)</td>
</tr>
</tbody>
</table>

#### glycerol (56-81-5)

<table>
<thead>
<tr>
<th>LC50 fish 1</th>
<th>54000 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Lethal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>&gt; 10000 mg/l (24 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

**Protease K, Lyophilized (39450-01-6)**

| Persistence and degradability | Biodegradability in water: no data available. |
### 12.3. Bioaccumulative potential

**Protease K, Lyophilized (39450-01-6)**

Bioaccumulative potential: No bioaccumulation data available.

<table>
<thead>
<tr>
<th>Substance/Mixture</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>tris(hydroxymethyl)aminomethane (77-86-1)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>calcium chloride, dihydrate (10035-04-8)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>Glycerol (56-81-5)</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

**Log Pow**

- **tris(hydroxymethyl)aminomethane (77-86-1)**: -2.31 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
- **Calcium chloride, dihydrate (10035-04-8)**: Not applicable.
- **Glycerol (56-81-5)**: -1.75 (Experimental value, Equivalent or similar to OECD 107, 25 °C)

**12.4. Mobility in soil**

**Protease K, Lyophilized (39450-01-6)**

Ecology - soil: No (test)data on mobility of the substance available.

<table>
<thead>
<tr>
<th>Substance/Mixture</th>
<th>Mobility in soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>tris(hydroxymethyl)aminomethane (77-86-1)</td>
<td>Highly mobile in soil.</td>
</tr>
<tr>
<td>calcium chloride, dihydrate (10035-04-8)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
<tr>
<td>Glycerol (56-81-5)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>

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

**Component**

- **Glycerol (56-81-5)**: This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
- **Calcium chloride, dihydrate (10035-04-8)**: This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

**12.6. Other adverse effects**

No additional information available
SECTION 13: Disposal considerations

13.1. Waste treatment methods

SECTION 14: Transport information
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR): Not applicable
UN-No. (IMDG): Not applicable
UN-No. (IATA): Not applicable
UN-No. (ADN): Not applicable
UN-No. (RID): Not applicable

14.2. UN proper shipping name
Proper Shipping Name (ADR): Not applicable
Proper Shipping Name (IMDG): Not applicable
Proper Shipping Name (IATA): Not applicable
Proper Shipping Name (ADN): Not applicable
Proper Shipping Name (RID): Not applicable

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR): Not applicable

IMDG
Transport hazard class(es) (IMDG): Not applicable

IATA
Transport hazard class(es) (IATA): Not applicable

ADN
Transport hazard class(es) (ADN): Not applicable

RID
Transport hazard class(es) (RID): Not applicable

14.4. Packing group
Packing group (ADR): Not applicable
Packing group (IMDG): Not applicable
Packing group (IATA): Not applicable
Packing group (ADN): Not applicable
Packing group (RID): Not applicable

14.5. Environmental hazards
Dangerous for the environment: No
Marine pollutant: No
Other information: No supplementary information available

14.6. Special precautions for user
Overland transport
Not applicable
Transport by sea
Not applicable
Air transport
Not applicable
Inland waterway transport
Not applicable
Rail transport
Not applicable

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

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Protease: Protease-K
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations
No additional information available

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Irrit. 2</strong></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td><strong>Resp. Sens. 1</strong></td>
</tr>
<tr>
<td>Respiratory sensitisation, Category 1</td>
</tr>
<tr>
<td><strong>Skin Irrit. 2</strong></td>
</tr>
<tr>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td><strong>STOT SE 3</strong></td>
</tr>
<tr>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
</tr>
<tr>
<td><strong>H315</strong></td>
</tr>
<tr>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td><strong>H319</strong></td>
</tr>
<tr>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td><strong>H334</strong></td>
</tr>
<tr>
<td>May cause allergy or asthma symptoms or breathing difficulties if inhaled.</td>
</tr>
<tr>
<td><strong>H335</strong></td>
</tr>
<tr>
<td>May cause respiratory irritation.</td>
</tr>
</tbody>
</table>

Safety Data Sheet applicable for regions: GB - United Kingdom

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Product name: Protease-T Buffer
Product code: P373
Product group: Blend

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
No additional information available

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number
Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Not classified

Adverse physicochemical, human health and environmental effects
To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>&gt;= 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>tris(hydroxymethyl)aminomethane</td>
<td>(CAS-No.) 77-86-1 (EC-No.) 201-064-4</td>
<td>&lt; 0.05</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Rinse eyes with water as a precaution.
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
No additional information available

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.
SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Take up liquid spill into absorbent material.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Liquid
Colour: No data available
Odour: No data available
Protease-T Buffer
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : Not applicable
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Not applicable
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : No data available
Solubility : No data available
Log Pow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Tris(hydroxymethyl)aminomethane (77-86-1)

LD50 oral rat > 5000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Female, Experimental value, Oral, 14 day(s))

LD50 dermal rat > 5000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Acute aquatic toxicity: Not classified
Chronic aquatic toxicity: Not classified

tris(hydroxymethyl)aminomethane (77-86-1)
EC50 Daphnia 1: > 980 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h algae (1): 397 mg/l (Equivalent or similar to OECD 201, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)

12.2. Persistence and degradability
tris(hydroxymethyl)aminomethane (77-86-1)
Persistence and degradability: Readily biodegradable in water.

12.3. Bioaccumulative potential
tris(hydroxymethyl)aminomethane (77-86-1)
Log Pow: -2.31 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
Bioaccumulative potential: Not bioaccumulative.

12.4. Mobility in soil
tris(hydroxymethyl)aminomethane (77-86-1)
Log Koc: 1.87 (log Koc, QSAR)
Ecology - soil: Highly mobile in soil.

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR): Not applicable
UN-No. (IMDG): Not applicable
UN-No. (IATA): Not applicable
UN-No. (ADN): Not applicable
UN-No. (RID): Not applicable

14.2. UN proper shipping name
Proper Shipping Name (ADR): Not applicable
Proper Shipping Name (IMDG): Not applicable
Proper Shipping Name (IATA): Not applicable
Proper Shipping Name (ADN): Not applicable
Proper Shipping Name (RID): Not applicable

14.3. Transport hazard class(es)
ADR: Transport hazard class(es) (ADR): Not applicable
IMDG: Transport hazard class(es) (IMDG): Not applicable
IATA: Transport hazard class(es) (IATA): Not applicable
ADN: Transport hazard class(es) (ADN): Not applicable
## Protease-T Buffer Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### RID

<table>
<thead>
<tr>
<th>RID</th>
<th>Transport hazard class(es) (RID)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 14.4. Packing group

<table>
<thead>
<tr>
<th>Packing group</th>
<th>Packing group (ADR) : Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Packing group (IMDG) : Not applicable</td>
</tr>
<tr>
<td></td>
<td>Packing group (IATA) : Not applicable</td>
</tr>
<tr>
<td></td>
<td>Packing group (ADN) : Not applicable</td>
</tr>
<tr>
<td></td>
<td>Packing group (RID) : Not applicable</td>
</tr>
</tbody>
</table>

### 14.5. Environmental hazards

<table>
<thead>
<tr>
<th>Dangerous for the environment</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine pollutant</td>
<td>No</td>
</tr>
<tr>
<td>Other information</td>
<td>No supplementary information available</td>
</tr>
</tbody>
</table>

### 14.6. Special precautions for user

<table>
<thead>
<tr>
<th>Overland transport</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport by sea</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Air transport</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Inland waterway transport</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Rail transport</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

### SECTION 15: Regulatory information

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

**15.1.1. EU-Regulations**

Contains no REACH substances with Annex XVII restrictions  
Contains no substance on the REACH candidate list  
Contains no REACH Annex XIV substances  


**15.1.2. National regulations**

No additional information available

### SECTION 16: Other information

**Safety Data Sheet applicable for regions**

<table>
<thead>
<tr>
<th>GB - United Kingdom</th>
</tr>
</thead>
</table>

**SDS EU (REACH Annex II)**

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*
Bovine Protein
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of issue: 7/17/2013   Revision date: 5/11/2017   Version: 1.1

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

1.1. Product identifier
Product form: Mixture
Product name: Bovine Protein
Product code: P501
Product group: Trade product

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
No additional information available

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - P 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number
Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation/Company</th>
<th>Address</th>
<th>Emergency number</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre) Royal Victoria Hospital</td>
<td>Grosvenor Road BT12 6BA Belfast</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre) City Hospital</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre) Gwernwyn Ward, Llandough Hospital</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit, Guy's &amp; St Thomas' Hospital Trust</td>
<td>Avonley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects
To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

2.3. Other hazards
No additional information available
SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>&gt;= 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>Bovine Serum Albumin</td>
<td>(CAS-No.) 9048-46-8</td>
<td>0.5 - 2</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Rinse eyes with water as a precaution.
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
No additional information available

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Take up liquid spill into absorbent material.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available
8.2. Exposure controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

- **Hand protection:**
  - Protective gloves

- **Eye protection:**
  - Safety glasses

- **Skin and body protection:**
  - Wear suitable protective clothing

- **Respiratory protection:**
  - In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:
Avoid release to the environment.

### SECTION 9: Physical and chemical properties

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

Hazardous decomposition products.
**SECTION 11: Toxicological information**

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

12.1. Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Acute aquatic toxicity: Not classified

Chronic aquatic toxicity: Not classified

12.2. Persistence and degradability

Bovine Serum Albumin (9048-46-8)

Persistence and degradability: Readily biodegradable in water.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

**SECTION 13: Disposal considerations**

13.1. Waste treatment methods


**SECTION 14: Transport information**

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

<table>
<thead>
<tr>
<th>Number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (ADR)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IMDG)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (ADN)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (RID)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

14.2. UN proper shipping name

<table>
<thead>
<tr>
<th>Name</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name (ADR)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Proper Shipping Name (IMDG)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Proper Shipping Name (IATA)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Proper Shipping Name (ADN)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Proper Shipping Name (RID)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

14.3. Transport hazard class(es)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>Not applicable</td>
</tr>
<tr>
<td>IMDG</td>
<td>Not applicable</td>
</tr>
<tr>
<td>IATA</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Bovine Protein
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

ADN
Transport hazard class(es) (ADN) : Not applicable

RID
Transport hazard class(es) (RID) : Not applicable

14.4. Packing group
Packing group (ADR) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
No data available

Transport by sea
No data available

Air transport
No data available

Inland waterway transport
No data available

Rail transport
No data available

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

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations
No additional information available

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information
Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Product name: Stop Solution
Product code: S101
Product group: Blend

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

1.2.1. Relevant identified uses
No additional information available

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
Geno Technology, Inc./G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number
Emergency number: Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Not classified

Adverse physicochemical, human health and environmental effects
To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
EUH-statements: EUH210 - Safety data sheet available on request.

2.3. Other hazards
No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>&gt;= 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride</td>
<td>(CAS-No.) 1185-53-1 (EC-No.) 214-684-5</td>
<td>0.5 - 2</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335</td>
</tr>
<tr>
<td>glycerol</td>
<td>(CAS-No.) 56-81-5 (EC-No.) 200-289-5</td>
<td>0.05 - 0.5</td>
<td>Not classified</td>
</tr>
<tr>
<td>ethylenediaminetetra acetic acid</td>
<td>(CAS-No.) 67-42-5 (EC-No.) 200-651-2</td>
<td>&lt; 0.05</td>
<td>Not classified</td>
</tr>
<tr>
<td>1% Bromophenol blue</td>
<td>(CAS-No.) 115-39-9</td>
<td>&lt; 0.05</td>
<td>Not classified</td>
</tr>
<tr>
<td>tris(2-carboxyethyl)phosphine hydrochloride</td>
<td>(CAS-No.) 51805-45-9</td>
<td>&lt; 0.05</td>
<td>Skin Corr. 1B, H314</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16
SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Wash skin with plenty of water.
First-aid measures after eye contact: Rinse eyes with water as a precaution.
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
No additional information available

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Take up liquid spill into absorbent material.
Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>glycerol (56-81-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom - Occupational Exposure Limits</td>
</tr>
<tr>
<td>WEL TWA (mg/m³)</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls:
Ensure good ventilation of the work station.

Hand protection:
Protective gloves

Eye protection:
Safety glasses
Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Physical state: Liquid
Colour: No data available
Odour: No data available
Odour threshold: No data available
pH: No data available
Relative evaporation rate (butylacetate=1): No data available
Melting point: Not applicable
Freezing point: No data available
Boiling point: No data available
Flash point: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Not applicable
Vapour pressure: No data available
Relative vapour density at 20 °C: No data available
Relative density: No data available
Solubility: No data available
Log Pow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information
11.1. Information on toxicological effects
Acute toxicity (oral): Not classified
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified

glycerol (56-81-5)
LD50 oral rat 27200 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Female, Experimental value, Oral)
LD50 dermal 56750 mg/kg (4 day(s), Guinea pig, Male / female, Experimental value, Dermal, 14 day(s))
Stop Solution
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>LC50 inhalation rat (mg/l)</th>
<th>&gt; 2.75 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Converted value, Inhalation (vapours))</th>
</tr>
</thead>
<tbody>
<tr>
<td>tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)</td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>3500 mg/kg (Rat, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 3000 mg/kg (Rat, Dermal)</td>
</tr>
<tr>
<td>ethylenebis(oxyethylenenitrilo)tetra acetic acid (67-42-5)</td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>3587 mg/kg (Rat, Oral)</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>SECTION 12: Ecological information</td>
<td></td>
</tr>
<tr>
<td>12.1. Toxicity</td>
<td></td>
</tr>
<tr>
<td>Ecology - general</td>
<td>The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>glycerol (56-81-5)</td>
<td></td>
</tr>
<tr>
<td>LC50 fish 1</td>
<td>54000 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Lethal)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>&gt; 10000 mg/l (24 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)</td>
</tr>
<tr>
<td>12.2. Persistence and degradability</td>
<td></td>
</tr>
<tr>
<td>2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)</td>
<td>Persistence and degradability Biodegradability in water: no data available.</td>
</tr>
<tr>
<td>glycerol (56-81-5)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable in water.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.87 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>1.16 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>1.217 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.71</td>
</tr>
<tr>
<td>tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)</td>
<td>Persistence and degradability Biodegradability in water: no data available.</td>
</tr>
<tr>
<td>ethylenebis(oxyethylenenitrilo)tetra acetic acid (67-42-5)</td>
<td>Persistence and degradability Biodegradability in water: no data available.</td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential</td>
<td></td>
</tr>
<tr>
<td>2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)</td>
<td>Bioaccumulative potential No bioaccumulation data available.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Component</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol (56-81-5)</td>
<td>-1.75 (Experimental value, Equivalent or similar to OECD 107, 25 °C)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)</td>
<td></td>
<td>No bioaccumulation data available.</td>
</tr>
<tr>
<td>ethylenebis(oxyethylenenitrilo)tetra acetic acid (67-42-5)</td>
<td>-4.41 (Estimated value)</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Component</th>
<th>Surface tension</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>glycerol (56-81-5)</td>
<td>0.0634 N/m (20 °C, 1000 g/l)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

Component:

- glycerol (56-81-5) This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
- glycerol (56-81-5) This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods


SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

<table>
<thead>
<tr>
<th>UN-No.</th>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
<th>ADN</th>
<th>RID</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (ADR)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IMDG)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (ADN)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (RID)</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

14.2. UN proper shipping name

Proper Shipping Name (ADR): Not applicable
Proper Shipping Name (IMDG): Not applicable
Proper Shipping Name (IATA): Not applicable
Proper Shipping Name (ADN): Not applicable
Proper Shipping Name (RID): Not applicable

14.3. Transport hazard class(es)

ADR: Not applicable
IMDG: Not applicable
IATA: Not applicable
ADN: Not applicable
RID: Not applicable

14.4. Packing group

Packing group (ADR): Not applicable
Packing group (IMDG): Not applicable
Packing group (IATA): Not applicable
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Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
Not applicable
Transport by sea
Not applicable
Air transport
Not applicable
Inland waterway transport
Not applicable
Rail transport
Not applicable

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

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations
No additional information available

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation, Category 1B</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>EUH210</td>
<td>Safety data sheet available on request.</td>
</tr>
</tbody>
</table>

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.