Safety Data Sheet

Cat. # 786-249

FOCUS Membrane Proteins

Size: 50 Preps
UPPA I
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
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 : UPPA I
Product code : 015U
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>
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</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>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>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
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<tr>
<td></td>
<td>National Poisons Information Service Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
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<tr>
<td></td>
<td>Guy's &amp; St Thomas' Poisons Unit</td>
<td>Avonley Road SE14 5ER London</td>
<td>0870 243 2241</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Poisons Information Service (Newcastle Centre)</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]

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>H Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation, Category 1A</td>
<td>H314</td>
</tr>
<tr>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
<td>H335</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 2</td>
<td>H411</td>
</tr>
</tbody>
</table>

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

May cause respiratory irritation. Causes severe skin burns and eye damage. Toxic to aquatic life with long lasting effects.
2.2. Label elements

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

Hazard pictograms (CLP):

- GHS05
- GHS07
- GHS09

CLP Signal word : Danger

Hazardous ingredients : trichloroacetic acid

Hazard statements (CLP):

- H314 - Causes severe skin burns and eye damage.
- H335 - May cause respiratory irritation.
- H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP):

- P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
- P264 - Wash hands, forearms and face thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 - Immediately call a POISON CENTER or doctor.
- P312 - Call a POISON CENTRE or doctor if you feel unwell.
- P321 - Specific treatment (see supplemental first aid instruction on this label).
- P391 - Collect spillage.
- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
- P405 - Store locked up.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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>
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<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>50 - 80</td>
<td>Not classified</td>
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<tr>
<td>trichloroacetic acid</td>
<td>(CAS-No.) 76-03-9 (EC-No.) 200-927-2 (EC Index-No.) 607-004-00-7</td>
<td>5 - 10</td>
<td>Skin Corr. 1A, H314 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410</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>trichloroacetic acid</td>
<td>(CAS-No.) 76-03-9 (EC-No.) 200-927-2 (EC Index-No.) 607-004-00-7</td>
<td>(C &gt;= 1) STOT SE 3, H335</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 : Call a physician immediately.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact : Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.
4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after inhalation: May cause respiratory irritation.
Symptoms/effects after skin contact: Burns.
Symptoms/effects after eye contact: Serious damage to eyes.
Symptoms/effects after ingestion: Burns.

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. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.

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: Collect spillage.
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: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Wear personal protective equipment.
Hygiene measures: Wash contaminated clothing before reuse. 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 locked up. Store in a well-ventilated place. Keep container tightly closed. 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>
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<tr>
<td>Colour</td>
<td>Clear</td>
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<tr>
<td>Odour</td>
<td>None</td>
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<td>Odour threshold</td>
<td>No data available</td>
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<tr>
<td>pH</td>
<td>No data available</td>
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<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
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<tr>
<td>Melting point</td>
<td>Not applicable</td>
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<tr>
<td>Freezing point</td>
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<td>Boiling point</td>
<td>No data available</td>
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<td>Flash point</td>
<td>No data available</td>
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<td>Auto-ignition temperature</td>
<td>No data available</td>
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<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Flammability (solid, gas)</td>
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<td>Vapour pressure</td>
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<td>Relative vapour density at 20 °C</td>
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<tr>
<td>Relative density</td>
<td>No data available</td>
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<tr>
<td>Solubility</td>
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<tr>
<td>Log Pow</td>
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<tr>
<td>Viscosity, kinematic</td>
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<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
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<tr>
<td>Explosive properties</td>
<td>No data available</td>
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<tr>
<td>Oxidising properties</td>
<td>No data available</td>
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<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
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>trichloroacetic acid (76-03-9)</th>
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<tbody>
<tr>
<td>LD50 oral rat</td>
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<tr>
<td>Skin corrosion/irritation</td>
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<tr>
<td>Serious eye damage/irritation</td>
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<tr>
<td>Respiratory or skin sensitisation</td>
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<tr>
<td>Germ cell mutagenicity</td>
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<tr>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
</tr>
<tr>
<td>STOT-single exposure</td>
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<td>STOT-repeated exposure</td>
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<tr>
<td>Aspiration hazard</td>
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>trichloroacetic acid (76-03-9)</th>
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<tbody>
<tr>
<td>LC50 fish 1</td>
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<tr>
<td>EC50 Daphnia 1</td>
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<td>ErC50 (algae)</td>
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12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>trichloroacetic acid (76-03-9)</th>
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<tr>
<td>Persistence and degradability</td>
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12.3. Bioaccumulative potential

<table>
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<th>trichloroacetic acid (76-03-9)</th>
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<tbody>
<tr>
<td>BCF fish 1</td>
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<tr>
<td>Log Pow</td>
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<tr>
<td>Bioaccumulative potential</td>
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12.4. Mobility in soil

<table>
<thead>
<tr>
<th>trichloroacetic acid (76-03-9)</th>
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<tbody>
<tr>
<td>Surface tension</td>
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<tr>
<td>Log Koc</td>
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<tr>
<td>Ecology - soil</td>
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12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Component</th>
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<tr>
<td>trichloroacetic acid (76-03-9)</td>
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<td></td>
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</table>

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste disposal 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 |
| 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 | Yes |
| Marine pollutant              | Yes |
| 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
UPPA I
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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:

Aquatic Acute 1  Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1  Hazardous to the aquatic environment — Chronic Hazard, Category 1
Skin Corr. 1A   Skin corrosion/irritation, Category 1A
STOT SE 3  Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H314  Causes severe skin burns and eye damage.
H335  May cause respiratory irritation.
H400  Very toxic to aquatic life.
H410  Very toxic to aquatic life with long lasting effects.
H411  Toxic to aquatic life with long lasting effects.

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.
UPPA II
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
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 : UPPA II
Product code : 032U
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)

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; 90</td>
<td>Not classified</td>
</tr>
<tr>
<td>sodium carbonate</td>
<td>(CAS-No.) 497-19-8</td>
<td>(EC-No.) 207-838-8</td>
<td>0.05 - 0.5</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. Remove the victim into fresh air.

**First-aid measures after skin contact**: Wash immediately with lots of water (15 minutes)/shower. Soap may be used. Wash skin with plenty of water.

**First-aid measures after eye contact**: Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Do not apply neutralizing agents. Rinse eyes with water as a precaution.

**First-aid measures after ingestion**: Rinse mouth with water. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre (www.big.be/antigif.htm). Call a poison center or a doctor if you feel unwell.

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

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

**Symptoms/effects after eye contact**: 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


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

**Fire hazard**: DIRECT FIRE HAZARD: Most organic solids may burn if strongly heated. INDIRECT FIRE HAZARD: Heating increases the fire hazard.

**Explosion hazard**: DIRECT EXPLOSION HAZARD: Most organic solids are liable to dust explosion hazard. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.

**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: have neighbourhood close doors and windows.

**Protection during firefighting**: Heat/fire exposure: compressed air/oxygen apparatus. 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. Mark the danger area. Prevent dust cloud formation, e.g. by wetting. Wash contaminated clothes.

#### 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. Knock down/dilute dust cloud with water spray.

**Methods for cleaning up**: Take up liquid spill into absorbent material. Stop dust cloud by humidifying. Scoop solid spill 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.

### 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. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Avoid raising dust. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

**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.

**Storage temperature:** RT

**Information on mixed storage:** KEEP SUBSTANCE AWAY FROM: oxidizing agents. water/moisture.

**Storage area:** Store in a dry area. Meet the legal requirements.

**Special rules on packaging:** SPECIAL REQUIREMENTS: closing. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

**Packaging materials:** SUITABLE MATERIAL: synthetic material.

#### 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>Colourless.</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic.</td>
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<td>Odour threshold</td>
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<td>pH</td>
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<td>Relative evaporation rate</td>
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<td>Melting point</td>
<td>Not applicable</td>
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<tr>
<td>Freezing point</td>
<td>No data available</td>
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<tr>
<td>Boiling point</td>
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<tr>
<td>Flash point</td>
<td>No data available</td>
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<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>
</tbody>
</table>
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

sodium carbonate (497-19-8)
LD50 oral rat: 2800 mg/kg (Rat, Male/female, Experimental value)
LD50 dermal rabbit: > 2000 mg/kg (16 CFR 1500. 40, 24 h, Rabbit, Experimental value)
LC50 inhalation rat (mg/l): 2.3 mg/l (2 h, Rat, Male, Experimental value)
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

sodium carbonate (497-19-8)
LC50 fish 1: 300 mg/l (Other, 96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value)
sodium carbonate (497-19-8)
EC50 Daphnia 1 200 - 227 mg/l (Other, 48 h, Ceriodaphnia sp., Semi-static system, Fresh water, Experimental value)

12.2. Persistence and degradability

sodium carbonate (497-19-8)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable (inorganic)</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

sodium carbonate (497-19-8)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>-6.19 (Estimated value)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

sodium carbonate (497-19-8)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
<td>Low potential for adsorption in soil.</td>
</tr>
</tbody>
</table>

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

| Waste treatment methods | Remove to an authorized plant for the destruction, neutralization and elimination of hazardous waste. |


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

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. 4 (Inhalation:dust,mist)  Acute toxicity (inhalation:dust,mist) Category 4
Eye Irrit. 2  Serious eye damage/eye irritation, Category 2
H319  Causes serious eye irritation.
H332  Harmful if inhaled.

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**: Perfect Focus Buffer I
- **Product code**: 072P
- **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 - 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>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>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>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>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit</td>
<td>Avonley Road SE14 5ER London</td>
<td>0870 243 2241</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 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]

- **Hazardous ingredients**: sodium hydroxide
Perfect Focus Buffer I
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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>sodium hydroxide</td>
<td>(CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6</td>
<td>0.05 - 0.5</td>
<td>Met. Corr. 1, H290 Skin Corr. 1A, H314</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>sodium hydroxide</td>
<td>(CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6</td>
<td>( 0.5 =&lt; C &lt; 2) Eye Irrit. 2, H319 ( 0.5 =&lt; C &lt; 2) Skin Irrit. 2, H315 ( 2 =&lt; C &lt; 5) Skin Corr. 1B, H314 (C &gt;= 5) Skin Corr. 1A, 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
Reactivity in case of fire: Thermal decomposition generates: Corrosive vapours.
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.

Storage temperature: 20 °C

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>sodium hydroxide (1310-73-2)</th>
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</thead>
<tbody>
<tr>
<td>United Kingdom</td>
</tr>
<tr>
<td>WEL STEL (mg/m³)</td>
</tr>
<tr>
<td>2 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

<table>
<thead>
<tr>
<th>Physical state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
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<table>
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<thead>
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<th>Flash point</th>
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</table>

<table>
<thead>
<tr>
<th>Auto-ignition temperature</th>
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</tbody>
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<table>
<thead>
<tr>
<th>Decomposition temperature</th>
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<table>
<thead>
<tr>
<th>Flammability (solid, gas)</th>
</tr>
</thead>
<tbody>
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<td>Not applicable</td>
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<table>
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<th>Vapour pressure</th>
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<table>
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<th>Relative vapour density at 20 °C</th>
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<table>
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<table>
<thead>
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<th>Viscosity, kinematic</th>
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<tbody>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Viscosity, dynamic</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Explosive properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
</tr>
</tbody>
</table>


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

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
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

<table>
<thead>
<tr>
<th>sodium hydroxide (1310-73-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>45.4 mg/l (Other, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>40.4 mg/l (Other, 48 h, Ceriodaphnia sp., Experimental value)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>sodium hydroxide (1310-73-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable (inorganic)</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential
**Perfect Focus Buffer I**

**Safety Data Sheet**

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

---

### sodium hydroxide (1310-73-2)

| Bioaccumulative potential | Not bioaccumulative. |

### 12.4. Mobility in soil

| sodium hydroxide (1310-73-2) | Ecology - soil | No (test)data on mobility of the substance 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

| 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 |

**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:

<table>
<thead>
<tr>
<th>H- and EUH-statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Met. Corr. 1</td>
<td>Corrosive to metals, Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation, Category 1A</td>
</tr>
<tr>
<td>H290</td>
<td>May be corrosive to metals.</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage.</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 : Perfect Focus Buffer II
Product code : 075P
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)

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>5 - 10</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335</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

**For non-emergency personnel**

- **Emergency procedures**: Ventilate spillage area.

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

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

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)</td>
<td>Biodegradability in water: no data available.</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)</td>
<td>No bioaccumulation data available.</td>
</tr>
</tbody>
</table>

#### 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>UN-No. (ADR)</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not regulated</td>
</tr>
<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 regulated</td>
</tr>
<tr>
<td>UN-No. (RID)</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

#### 14.2. UN proper shipping name

<table>
<thead>
<tr>
<th>Proper Shipping Name (ADR)</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (ADN)</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>
Perfect Focus Buffer II
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>14.3. Transport hazard class(es)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>Not regulated</td>
</tr>
<tr>
<td>IMDG</td>
<td>Not regulated</td>
</tr>
<tr>
<td>IATA</td>
<td>Not regulated</td>
</tr>
<tr>
<td>ADN</td>
<td>Not regulated</td>
</tr>
<tr>
<td>RID</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.4. Packing group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (ADR)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing group (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing group (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing group (ADN)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing group (RID)</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.5. Environmental hazards</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dangerous for the environment</td>
<td>No</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>No</td>
</tr>
<tr>
<td>Other information</td>
<td>No supplementary information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.6. Special precautions for user</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overland transport</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Transport by sea</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Air transport</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Inland waterway transport</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Rail transport</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.7. Transport in bulk according to Annex II of Marpol and the IBC Code</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 15: Regulatory information**

<table>
<thead>
<tr>
<th>15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15.1.1. EU-Regulations</td>
<td></td>
</tr>
<tr>
<td>Contains no REACH substances with Annex XVII restrictions</td>
<td></td>
</tr>
<tr>
<td>Contains no substance on the REACH candidate list</td>
<td></td>
</tr>
<tr>
<td>Contains no REACH Annex XIV substances</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15.1.2. National regulations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional information available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15.2. Chemical safety assessment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No chemical safety assessment has been carried out</td>
<td></td>
</tr>
</tbody>
</table>
Perfect Focus Buffer II
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### SECTION 16: Other information

<table>
<thead>
<tr>
<th>H- and EUH-statements</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 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>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.
### 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>SEED</td>
</tr>
<tr>
<td>EC-No.</td>
<td>232-686-4</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>9005-84-9</td>
</tr>
<tr>
<td>Product code</td>
<td>099S</td>
</tr>
<tr>
<td>Type of product</td>
<td>Pure substance</td>
</tr>
<tr>
<td>Formula</td>
<td>(C6H10O5)n</td>
</tr>
<tr>
<td>Synonyms</td>
<td>aardappelzetmeel / alpha-amylopectin / amidon soluble / amylodextrin / amyllogan / dextrin, amylo / Kartoffelstärke / korde / potato starch / soluble starch / stabilose AO / stabilose K / starch from potatoes / starch soluble / Stärke, löslich, reinst / zetmeel, oplosbaar / zulkovsky starch</td>
</tr>
<tr>
<td>Product group</td>
<td>Trade product</td>
</tr>
<tr>
<td>BIG no</td>
<td>30550</td>
</tr>
</tbody>
</table>

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

##### 1.2.1. Relevant identified uses

- Use of the substance/mixture: Paper production: thickener

##### 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

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

Not applicable
SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: If you feel unwell, seek medical advice.

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.

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.


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

Symptoms/effects after inhalation: AFTER INHALATION OF DUST/MIST: Coughing.

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

Fire hazard: DIRECT FIRE HAZARD: Non-flammable. INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard: DIRECT EXPLOSION HAZARD: Fine dust is explosive with air. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.

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: have neighbourhood close doors and windows.

Firefighting instructions: No specific fire-fighting instructions required.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Emergency procedures: Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.


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. Knock down/dilute dust cloud with water spray. Provide equipment/receptacles with earthing. Powdered form: no compressed air for pumping over spills.
Methods for cleaning up: Prevent dust cloud formation. Scoop solid spill into closing containers. Powdered: do not use compressed air for pumping over spills. 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.

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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.
Storage temperature: RT
Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents.
Storage area: Store in a dry area. Keep container in a well-ventilated place. Provide the tank with earthing. Meet the legal requirements.
Special rules on packaging: SPECIAL REQUIREMENTS: closing. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>Country</th>
<th>WEL TWA (mg/m³)</th>
<th>United Kingdom</th>
<th>10 mg/m³</th>
<th>4 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEED (9005-84-9)</td>
<td>United Kingdom</td>
<td>WEL TWA (mg/m³)</td>
<td>10 mg/m³</td>
<td>4 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Starch (9005-84-9)</td>
<td>United Kingdom</td>
<td>WEL TWA (mg/m³)</td>
<td>10 mg/m³</td>
<td>4 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

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

Hand protection:
Gloves

Eye protection:
Safety glasses. In case of dust production: protective goggles

Skin and body protection:
Protective clothing

Respiratory protection:
Dust production: dust mask with filter type P1

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: Solid
Appearance: Solid. Amorphous powder.
Molecular mass: 162.14 g/mol
SEED
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>White</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>4 - 7.5 (2 %)</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 380 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.5</td>
</tr>
<tr>
<td>Density</td>
<td>1500 kg/m³</td>
</tr>
<tr>
<td>Solubility</td>
<td>Moderately soluble in water. Substance sinks in water. Water: 5 g/100ml (90 °C)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>Not applicable</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>Not applicable</td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC content</td>
<td>0 %</td>
</tr>
</tbody>
</table>

**SECTION 10: Stability and reactivity**

10.1. Reactivity
Reacts with (strong) oxidizers: (increased) risk of fire.

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>Property</th>
<th>Value</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>pH: 4 - 7.5 (2 %)</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>pH: 4 - 7.5 (2 %)</td>
<td></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>
</tbody>
</table>
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : Mild water pollutant (surface water).
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Compound</th>
<th>Persistence and degradability</th>
<th>ThOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEED (9005-84-9)</td>
<td>Readily biodegradable in water.</td>
<td>1.18 g O₂/g substance</td>
</tr>
<tr>
<td>Starch (9005-84-9)</td>
<td>Readily biodegradable in water.</td>
<td>1.18 g O₂/g substance</td>
</tr>
</tbody>
</table>

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
Regional legislation (waste) : LWCA (the Netherlands): KGA category 03.
Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. May be discharged to wastewater treatment installation.
European List of Waste (LoW) code : 02 03 99 - wastes not otherwise specified

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

**RID**
**Transport hazard class(es) (RID)**  :  Not regulated

<table>
<thead>
<tr>
<th>14.4. Packing group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packing group (ADR)  :  Not regulated</td>
</tr>
<tr>
<td>Packing group (IMDG)  :  Not regulated</td>
</tr>
<tr>
<td>Packing group (IATA)  :  Not regulated</td>
</tr>
<tr>
<td>Packing group (ADN)  :  Not regulated</td>
</tr>
<tr>
<td>Packing group (RID)  :  Not regulated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.5. Environmental hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dangerous for the environment  :  No</td>
</tr>
<tr>
<td>Marine pollutant  :  No</td>
</tr>
<tr>
<td>Other information  :  No supplementary information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.6. Special precautions for user</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Overland transport  :  Not regulated</td>
</tr>
<tr>
<td>- Transport by sea  :  Not regulated</td>
</tr>
<tr>
<td>- Air transport  :  Not regulated</td>
</tr>
<tr>
<td>- Inland waterway transport  :  Not regulated</td>
</tr>
<tr>
<td>- Rail transport  :  Not regulated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.7. Transport in bulk according to Annex II of Marpol and the IBC Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**SECTION 15: Regulatory information**

<table>
<thead>
<tr>
<th>15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.1.1. EU-Regulations</td>
</tr>
<tr>
<td>Contains no REACH substances with Annex XVII restrictions</td>
</tr>
<tr>
<td>Contains no substance on the REACH candidate list</td>
</tr>
<tr>
<td>Contains no REACH Annex XIV substances</td>
</tr>
<tr>
<td>VOC content  :  0 %</td>
</tr>
</tbody>
</table>

| 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 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: Diluent III
Product code: 159D
Product group: Blend

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)

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; 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>CHAPS</td>
<td>(CAS-No.) 75621-03-3</td>
<td>2 - 5</td>
<td>Skin Irrit. 2, H315, Eye Irrit. 2, H319, STOT SE 3, H335</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. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Call a poison center or a doctor if you feel unwell.

First-aid measures after skin contact: Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention. Take victim to a doctor if irritation persists. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention. If skin irritation persists: Get medical advice/attention.

First-aid measures after eye contact: Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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

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

Symptoms/effects after inhalation: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible laryngeal spasm/oedema. May cause respiratory irritation.

Symptoms/effects after skin contact: Tingling/irritation of the skin. Irritation.

Symptoms/effects after eye contact: Irritation of the eye tissue. Eye irritation.

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

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions: Dilute toxic gases with water spray.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


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. Knock down/dilute dust cloud with water spray.
Methods for cleaning up: Mechanically recover the product. Stop dust cloud by covering with sand/earth. Scoop solid spill 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.

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:
Gloves

Eye protection:
Face shield. In case of dust production: protective goggles. Safety glasses

Skin and body protection:
Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

Respiratory protection:
Dust production: dust mask with filter type P2

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>None.</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>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>
</tbody>
</table>
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
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.
Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : No data available on ecotoxicity.
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

12.2. Persistence and degradability
Diluent III
Persistence and degradability : Biodegradability in water: no data available.

CHAPS (75621-03-3)
Persistence and degradability : Biodegradability in water: no data available.
12.3. Bioaccumulative potential

| Diluent III | Bioaccumulative potential | No bioaccumulation data available. |
| CHAPS (75621-03-3) | Bioaccumulative potential | No bioaccumulation data 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


Product/ Packaging disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Dissolve or mix with a combustible solvent.


**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 |
| 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:

<table>
<thead>
<tr>
<th>H-Statement</th>
<th>EUH Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</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>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.
SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Mixture
Product name: MPE Buffer I
Product code: 160M
Product group: Blend

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)

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>
</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. Remove the victim into fresh air.

First-aid measures after skin contact: Wash immediately with lots of water (15 minutes)/shower. Soap may be used. Wash skin with plenty of water.

First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Do not apply neutralizing agents. Rinse eyes with water as a precaution.

First-aid measures after ingestion: Rinse mouth with water. Victim is fully conscious: immediately induce vomiting. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre (www.big.be/antigif.htm). Call a poison center or a doctor if you feel unwell.

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

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

Symptoms/effects after skin contact: Red skin. Tingling/irritation of the skin.

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.

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

Firefighting instructions: Dilute toxic gases with water spray.


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. Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.

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. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. 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.

6.4. Reference to other sections

For further information refer to section 13.
SECTION 7: Handling and storage

7.1. Precautions for safe handling


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:

Gloves

Eye protection:

Face shield. In case of dust production: protective goggles. Safety glasses

Skin and body protection:

Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

Respiratory protection:

Dust formation: dust mask

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>Colourless.</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>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>
</tbody>
</table>

1/24/2018 EN (English)
MPE Buffer I
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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
Unstable on exposure to moisture.

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
Skin corrosion/iritation : Not classified
Serious eye damage/iritation : 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

12.2. Persistence and degradability
MPE Buffer I
Persistence and degradability : Biodegradability in water: no data available.

12.3. Bioaccumulative potential
MPE Buffer I
Bioaccumulative potential : Bioaccumulation: not applicable.

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
Waste treatment methods
Product/Packaging disposal recommendations: Specific preliminary treatment. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.

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

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

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: MPE Buffer II
Product code: 163M
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)

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.

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>
</tbody>
</table>
| Tertiary-octylphenoxypoly(ethoxylate) | (CAS-No.) 9036-19-5 | 5 - 10 | Skin Irrit. 2, H315
| | | | Eye Irrit. 2, H319

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 person to fresh air and keep comfortable for breathing. Remove the victim into fresh air.

**First-aid measures after skin contact**
- Wash immediately with lots of water (15 minutes)/shower. Soap may be used. Wash skin with plenty of water.

**First-aid measures after eye contact**
- Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Do not apply neutralizing agents. Rinse eyes with water as a precaution.

**First-aid measures after ingestion**
- Rinse mouth with water. Victim is fully conscious: immediately induce vomiting. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre (www.big.be/antigif.htm). Call a poison center or a doctor if you feel unwell.

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

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

**Symptoms/effects after skin contact**
- Red skin. Tingling/irritation of the skin.

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**
- Dry powder. Foam. Carbon dioxide.

**Unsuitable extinguishing media**
- Container may slop over if solid jet (water/foam) is applied.

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

**Firefighting instructions**
- Dilute toxic gases with water spray.

**Protection during firefighting**

**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. Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.

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. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. 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.

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. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

- **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:**
  - Gloves

- **Eye protection:**
  - Face shield. In case of dust production: protective goggles. Safety glasses

- **Skin and body protection:**
  - Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

- **Respiratory protection:**
  - Dust formation: dust mask

- **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:** Colourless.
- **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
MPE Buffer II
Safety Data Sheet

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
Unstable on exposure to moisture.

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>tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 dermal rabbit</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

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>MPE Buffer II</th>
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</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)</td>
</tr>
<tr>
<td>Persistence and degradability</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>MPE Buffer II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
</tbody>
</table>
12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>PBT assessment</th>
<th>vPvB assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)</td>
<td>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</td>
<td>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII</td>
</tr>
</tbody>
</table>

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations: Specific preliminary treatment. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.

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

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 regulated

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 a substance on the REACH candidate list in concentration ≥ 0.1% or with a lower specific limit: 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated (covering well-defined substances and UVCB substances, polymers and homologues) (CAS 9036-19-5)

Contains REACH Annex XIV substances:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Authorisation number</th>
<th>Sunset date</th>
<th>REACH authorisation exemptions</th>
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</thead>
<tbody>
<tr>
<td>4-(1,1,3,3-Tetramethylbutyl)phenol, ethoxylated (covering well-defined substances and UVCB substances, polymers and homologues) (CAS 9036-19-5)</td>
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<td>04/01/2021</td>
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</table>

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>Eye Irrit. 2</th>
<th>Serious eye damage/eye irritation, Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/Irritation, Category 2</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.
FOCUS Protein Solubilization Buffer
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
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: FOCUS Protein Solubilization Buffer
Product code: 265F
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)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]

Carcinogenicity, Category 2 — H351
Reproductive toxicity, Category 2 — H361
Hazardous to the aquatic environment — Chronic Hazard, Category 2 — H411

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects
Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Toxic to aquatic life with long lasting effects.
2.2. Label elements

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

CLP Signal word: Warning
Hazard pictograms (CLP):  
- GHS08
- GHS09

Hazardous ingredients: thiourea

Hazard statements (CLP):
- H351 - Suspected of causing cancer.
- H361 - Suspected of damaging fertility or the unborn child.
- H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP):
- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P308+P313 - IF exposed or concerned: Get medical advice/attention.
- P391 - Collect spillage.
- P405 - Store locked up.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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>
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<tbody>
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<td>urea</td>
<td>(CAS-No.) 57-13-6</td>
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<td>(EC-No.) 200-315-5</td>
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<td>thiourea</td>
<td>(CAS-No.) 62-56-6</td>
<td>10 - 50</td>
<td>Acute Tox. 4 (Oral), H302 Carc. 2, H351 Repr. 2, H361d Aquatic Chronic 2, H411</td>
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<td>(EC-No.) 200-543-5</td>
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<td>1-(3-sulfonatopropyl)pyridinium</td>
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Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: If you feel unwell, seek medical advice. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Consult a doctor/medical service. Immediately rinse with plenty of water. Soap may be used. Wash skin with plenty of water.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Take victim to an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.

First-aid measures after ingestion: Immediately consult a doctor/medical service. 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
Fire hazard: No data available on direct fire hazard.
Explosion hazard: No data available on direct explosion hazard.
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
Protective equipment: Gloves. Protective clothing. Safety glasses. Wear suitable protective clothing, gloves and eye or face protection.
Emergency procedures: Wash contaminated clothes. Prevent dust cloud formation. Only qualified personnel equipped with suitable protective equipment may intervene.

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. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment: Collect spillage.
Methods for cleaning up: Mechanically recover the product. 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. Work under local exhaust/ventilation. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.
Hygiene measures: Separate working clothes from town clothes. Launder separately. 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 locked up. Store in a well-ventilated place. Keep cool.
Storage temperature: RT

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
**FOCUS Protein Solubilization Buffer**

**Safety Data Sheet**

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

**Eye protection:**
Safety glasses

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

**Respiratory protection:**
[In case of inadequate ventilation] wear respiratory protection.

**Environmental exposure controls:**
Avoid release to the environment.

---

**SECTION 9: Physical and chemical properties**

<table>
<thead>
<tr>
<th>9.1. Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
</tr>
<tr>
<td><strong>Colour</strong></td>
</tr>
<tr>
<td><strong>Odour</strong></td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
</tr>
<tr>
<td><strong>pH</strong></td>
</tr>
<tr>
<td><strong>Relative evaporation rate (butylacetate=1)</strong></td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
</tr>
<tr>
<td><strong>Freezing point</strong></td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
</tr>
<tr>
<td><strong>Relative vapour density at 20 °C</strong></td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
</tr>
<tr>
<td><strong>Log Pow</strong></td>
</tr>
<tr>
<td><strong>Viscosity, kinematic</strong></td>
</tr>
<tr>
<td><strong>Viscosity, dynamic</strong></td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
</tr>
<tr>
<td><strong>Explosive limits</strong></td>
</tr>
</tbody>
</table>

**9.2. Other information**

No additional information available

---

**SECTION 10: Stability and reactivity**

<table>
<thead>
<tr>
<th>10.1. Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product is non-reactive under normal conditions of use, storage and transport.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.2. Chemical stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable under normal conditions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.3. Possibility of hazardous reactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>No dangerous reactions known under normal conditions of use.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.4. Conditions to avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>None under recommended storage and handling conditions (see section 7).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.5. Incompatible materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>No additional information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.6. Hazardous decomposition products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous decomposition products.</td>
</tr>
</tbody>
</table>
FOCUS Protein Solubilization Buffer
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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                               |

**urea (57-13-6)**

|                          |  
|--------------------------|--------------------------------------------------|
| LD50 oral rat            | 15000 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Female, Experimental value) |

**thiourea (62-56-6)**

|                          |  
|--------------------------|--------------------------------------------------|
| LD50 oral rat            | 2000 - 2500 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value) |
| LD50 dermal rabbit       | > 2800 mg/kg (Equivalent or similar to OECD 402, 24 h, Rabbit, Male/female, Experimental value) |
| LC50 inhalation rat (mg/l) | > 195 mg/m³ air (Equivalent or similar to OECD 403, 4 h, Rat, Male/female, Experimental value) |

Skin corrosion/irritation  
Serious eye damage/irritation  
Respiratory or skin sensitisation  
Germ cell mutagenicity  
Carcinogenicity  
Reproductive toxicity  
STOT-single exposure  
STOT-repeated exposure  
Aspiration hazard  

SECTION 12: Ecological information

12.1. Toxicity

|                          |  
|--------------------------|--------------------------------------------------|
| Ecology - general        | Harmful to aquatic life. Toxic to aquatic life with long lasting effects. |
| Acute aquatic toxicity   | Not classified                                   |
| Chronic aquatic toxicity | Toxic to aquatic life with long lasting effects. |

**urea (57-13-6)**

|                          |  
|--------------------------|--------------------------------------------------|
| LC50 fish 1              | > 6810 mg/l (96 h, Leuciscus idus, Experimental value) |
| EC50 Daphnia 1           | > 10000 mg/l (DIN 38412-11, 24 h, Daphnia magna, Static system, Fresh water, Experimental value) |

**thiourea (62-56-6)**

|                          |  
|--------------------------|--------------------------------------------------|
| LC50 fish 1              | 10000 mg/l (96 h, Brachydanio rerio, Static system) |
| LC50 fish 2              | > 10000 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 48 h, Leuciscus idus, Static system, Fresh water, Experimental value) |
| EC50 Daphnia 1           | 35 mg/l (48 h, Daphnia magna) |
| EC50 72h algae (1)       | 3.8 - 10 mg/l (Scenedesmus subspicatus) |

12.2. Persistence and degradability

**urea (57-13-6)**

|                          |  
|--------------------------|--------------------------------------------------|
| Persistence and degradability | Readily biodegradable in water. |
| ThOD                     | 0.27 g O₂/g substance |

**thiourea (62-56-6)**

|                          |  
|--------------------------|--------------------------------------------------|
| Persistence and degradability | Non degradable in the soil. Not readily biodegradable in water. |
| Biochemical oxygen demand (BOD) | 0.013 g O₂/g substance |
| Chemical oxygen demand (COD)  | 0.84 g O₂/g substance |
| ThOD                      | 2.42 g O₂/g substance |
| BOD (% of ThOD)           | 0.005 |

1-(3-sulfonatopropyl)pyridinium (15471-17-7)

|                          |  
|--------------------------|--------------------------------------------------|
| Persistence and degradability | Biodegradability in water; no data available. |
12.3. Bioaccumulative potential

**urea (57-13-6)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>1 (72 h, Brachydanio rerio, Fresh water, Literature study)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>&lt;-1.73 (Experimental value, EU Method A.8: Partition Coefficient)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (BCF &lt; 500).</td>
</tr>
</tbody>
</table>

**thiourea (62-56-6)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>&lt; 2 (Cyprinus carpio, Chronic)</td>
</tr>
<tr>
<td>BCF other aquatic organisms 1</td>
<td>0.2 (24 h, Chlorella sp., Calculated value)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-0.92 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

**1-(3-sulfonatopropyl)pyridinium (15471-17-7)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>No bioaccumulation data available.</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

**urea (57-13-6)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Koc</td>
<td>-1.43 - -1.19 (log Koc, Calculated value)</td>
</tr>
<tr>
<td>Ecology - soil</td>
<td>Highly mobile in soil.</td>
</tr>
</tbody>
</table>

**thiourea (62-56-6)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>0.0654 N/m (20 °C, 1 g/l)</td>
</tr>
<tr>
<td>Ecology - soil</td>
<td>Highly mobile in soil.</td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>urea (57-13-6)</td>
<td>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</td>
</tr>
<tr>
<td>thiourea (62-56-6)</td>
<td>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</td>
</tr>
<tr>
<td></td>
<td>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII</td>
</tr>
</tbody>
</table>

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
FOCUS Protein Solubilization Buffer
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 regulated

**RID**
Transport hazard class(es) (RID) : Not regulated

### 14.4. Packing group

<table>
<thead>
<tr>
<th>Packing group</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td></td>
</tr>
<tr>
<td>IMDG</td>
<td></td>
</tr>
<tr>
<td>IATA</td>
<td></td>
</tr>
<tr>
<td>ADN</td>
<td></td>
</tr>
<tr>
<td>RID</td>
<td></td>
</tr>
</tbody>
</table>

### 14.5. Environmental hazards

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

### 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:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral), Category 4</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 2</td>
</tr>
<tr>
<td>Carc. 2</td>
<td>Carcinogenicity, Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>Repr. 2</td>
<td>Reproductive toxicity, Category 2</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>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------------------------</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</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>H351</td>
<td>Suspected of causing cancer.</td>
</tr>
<tr>
<td>H361</td>
<td>Suspected of damaging fertility or the unborn child.</td>
</tr>
<tr>
<td>H361d</td>
<td>Suspected of damaging the unborn child.</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects.</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

<table>
<thead>
<tr>
<th>Product form</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>OrgoSol Buffer</td>
</tr>
<tr>
<td>Product code</td>
<td>283O</td>
</tr>
<tr>
<td>Product group</td>
<td>Blend</td>
</tr>
<tr>
<td>BIG no</td>
<td>10001</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)

<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) Gwynedd 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 6ER London</td>
<td>0870 243 2241</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]

- Flammable liquids, Category 2: H225
- Serious eye damage/eye irritation, Category 2: H319
- Specific target organ toxicity — Single exposure, Category 3: Narcosis: H336

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. May cause drowsiness or dizziness. Causes serious eye irritation.
2.2. Label elements

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

Hazard pictograms (CLP):
- GHS02
- GHS07

CLP Signal word: Danger

Hazardous ingredients: acetone; chloroform

Hazard statements (CLP):
- H225 - Highly flammable liquid and vapour.
- H319 - Causes serious eye irritation.
- H336 - May cause drowsiness or dizziness.

Precautionary statements (CLP):
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 - Keep container tightly closed.
- P240 - Ground and bond container and receiving equipment.
- P241 - Use explosion-proof equipment.
- P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
- P264 - Wash hands, forearms and face thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- P312 - Call a POISON CENTRE or doctor if you feel unwell.
- P337+P313 - If eye irritation persists: Get medical advice/attention.
- P370+P378 - In case of fire: Use media other than water to extinguish.

2.3. Other hazards

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

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>acetone</td>
<td>(CAS-No.) 67-64-1</td>
<td>&gt;= 80</td>
<td>Flam. Liq. 2, H225, Eye Irrit. 2, STOT SE 3, H336</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-662-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 606-001-00-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iso-amyl Alcohol</td>
<td>(CAS-No.) 123-51-3</td>
<td>&lt; 0.05</td>
<td>Flam. Liq. 3, H226, Acute Tox. 4 (Inhalation), STOT SE 3, H335</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 204-633-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 603-006-00-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>chloroform</td>
<td>(CAS-No.) 67-66-3</td>
<td>&lt; 0.05</td>
<td>Acute Tox. 4 (Oral), STOT RE 1, H372, Aquatic Acute 1, H400 (M=100)</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-663-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 602-006-00-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-propanol</td>
<td>(CAS-No.) 67-63-0</td>
<td>&lt; 0.05</td>
<td>Flam. Liq. 2, H225, Eye Irrit. 2, STOT SE 3, H336</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-661-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 603-117-00-0</td>
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</tr>
<tr>
<td>hydrogen chloride, conc=36%, aqueous solution</td>
<td>(CAS-No.) 7647-01-0</td>
<td>&lt; 0.05</td>
<td>Skin Corr. 1A, H314, 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>hydrogen chloride, conc=36%, aqueous solution</td>
<td>(CAS-No.) 7647-01-0</td>
<td>(C &gt;= 10) STOT SE 3, H335</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 231-595-7</td>
<td>(10 &lt;=C &lt; 25) Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 017-002-01-X</td>
<td>(10 &lt;=C &lt; 25) Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(C &gt;= 25) 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. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Take victim to a doctor if irritation persists. Rinse skin with water/shower. Take off immediately all contaminated clothing.

First-aid measures after eye contact: Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.


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

Symptoms/effects: May cause drowsiness or dizziness.


Symptoms/effects after skin contact: ON CONTINUOUS EXPOSURE/CONTACT: Not irritating. Cracking of the skin.

Symptoms/effects after eye contact: Irritation of the eye tissue.


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: Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture


Explosion hazard: DIRECT EXPLOSION HAZARD: Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD: Heat may cause pressure rise in tanks/drum: explosion risk. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".

Hazardous decomposition products in case of fire: Toxic fumes may be released.
OrganSol Buffer
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

5.3. Advice for firefighters

Firefighting instructions: Cool tanks/drum with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistent risk of physical explosion.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


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. Prevent spreading in sewers.

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. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapour with water curtain. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.

Methods for cleaning up: Take up liquid spill into absorbent material. Take up liquid spill into inert absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Spill must not return in its original container. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling. 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: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Avoid prolonged and repeated contact with skin. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

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

Technical measures: Ground/bond container and receiving equipment.

Storage conditions: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Storage temperature: 15 - 20 °C


Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases. halogens. amines.
**OrgoSol Buffer Safety Data Sheet**

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

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### Storage area

- Store in a cool area. Keep out of direct sunlight.
- Store in a dry area. Store in a dark area.
- Ventilation at floor level. Fireproof storeroom.
- Provide for an automatic sprinkler system.
- Provide for a tub to collect spills.
- Provide the tank with earthing.
- Meet the legal requirements.

### Special rules on packaging

- SPECIAL REQUIREMENTS: closing. with pressure relief valve. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

### Packaging materials

- SUITABLE MATERIAL: steel. stainless steel. carbon steel. aluminium. iron. copper. nickel. bronze. glass. MATERIAL TO AVOID: synthetic material.

### Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>OrgoSol Buffer</th>
<th>EU IOELV TWA (mg/m³)</th>
<th>EU IOELV TWA (ppm)</th>
<th>United Kingdom WEL TWA (mg/m³)</th>
<th>United Kingdom WEL TWA (ppm)</th>
<th>United Kingdom WEL STEL (mg/m³)</th>
<th>United Kingdom WEL STEL (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>chloroform (67-66-3)</td>
<td>EU IOELV TWA (mg/m³)</td>
<td>10 mg/m³</td>
<td>EU IOELV TWA (ppm)</td>
<td>2 ppm</td>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>9.9 mg/m³</td>
</tr>
<tr>
<td>Iso-amyl Alcohol (123-51-3)</td>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>366 mg/m³</td>
<td>United Kingdom WEL TWA (ppm)</td>
<td>100 ppm</td>
<td>United Kingdom WEL STEL (mg/m³)</td>
<td>458 mg/m³</td>
</tr>
<tr>
<td>acetone (67-64-1)</td>
<td>EU IOELV TWA (mg/m³)</td>
<td>1210 mg/m³</td>
<td>EU IOELV TWA (ppm)</td>
<td>500 ppm</td>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>1210 mg/m³</td>
</tr>
<tr>
<td>2-propanol (67-63-0)</td>
<td>United Kingdom WEL TWA (mg/m³)</td>
<td>999 mg/m³</td>
<td>United Kingdom WEL TWA (ppm)</td>
<td>400 ppm</td>
<td>United Kingdom WEL STEL (mg/m³)</td>
<td>1250 mg/m³</td>
</tr>
</tbody>
</table>

#### DNEL/DMEL (Workers)

- **Acute - local effects, inhalation**: 2420 mg/m³
- **Long-term - systemic effects, dermal**: 186 mg/kg bw/day
- **Long-term - systemic effects, inhalation**: 1210 mg/m³

#### DNEL/DMEL (General population)

- **Long-term - systemic effects,oral**: 62 mg/kg bw/day
- **Long-term - systemic effects, inhalation**: 200 mg/m³
- **Long-term - systemic effects, dermal**: 62 mg/kg bw/day

### PNEC (Water)

| PNEC (freshwater) | 10.6 mg/l |
| PNEC (marine water) | 1.06 mg/l |

### PNEC (Sediment)

| PNEC sediment (freshwater) | 30.4 mg/kg dwt |
| PNEC sediment (marine water) | 3.04 mg/kg dwt |

### PNEC (Soil)

| PNEC soil | 29.5 mg/kg dwt |

### PNEC (STP)
8.2. Exposure controls

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

Materials for protective clothing:
GIVE GOOD RESISTANCE: butyl rubber, tetrafluoroethylene. GIVE LESS RESISTANCE: chlorosulfonated polyethylene, natural rubber, neoprene, polyurethane, PVA, styrene-butadiene rubber. GIVE POOR RESISTANCE: nitrile rubber, polyethylene, PVC, viton, nitrile rubber/PVC

Hand protection:
Gloves

Eye protection:
Safety glasses

Skin and body protection:
Head/neck protection. Protective clothing

Respiratory protection:
Wear gas mask with filter type A if conc. in air > exposure limit

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>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic odour. Sweet odour. Fruity odour.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>306 - 653 ppm</td>
</tr>
<tr>
<td></td>
<td>737 - 1574 mg/m³</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>-95 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>56 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>-17 °C (Closed cup)</td>
</tr>
<tr>
<td>Critical temperature</td>
<td>235 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>465 °C</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>247 hPa (20 °C)</td>
</tr>
<tr>
<td>Vapour pressure at 50 °C</td>
<td>828 hPa</td>
</tr>
<tr>
<td>Critical pressure</td>
<td>47010 hPa</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>2</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.79</td>
</tr>
<tr>
<td>Relative density of saturated gas/air mixture</td>
<td>1.2</td>
</tr>
<tr>
<td>Density</td>
<td>786 kg/m³</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-0.24 (Test data)</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>0.417 mm²/s</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>0.32 mPa.s (20 °C)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Explosive limits: 2 - 12.8 vol %
60 - 310 g/m³

Lower explosive limit (LEL) : 2 vol %
Upper explosive limit (UEL) : 12.8 vol %

9.2. Other information
Minimum ignition energy : 1.15 mJ
Specific conductivity : 6000000 pS/m (25 °C)
Saturation concentration : 589 g/m³
VOC content : 100 %
Other properties : Gas/vapour heavier than air at 20°C. Clear. Highly volatile. Substance has neutral reaction.

SECTION 10: Stability and reactivity
10.1. Reactivity
Violent to explosive reaction with many compounds. Prolonged storage: on exposure to light: release of harmful gases/vapours.

10.2. Chemical stability
Unstable on exposure to light.

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
Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

OrgoSol Buffer
LD50 oral rat : 5800 mg/kg (Equivalent or similar to OECD 401, Rat, Female, Experimental value)
LD50 dermal rabbit : 20000 mg/kg (Equivalent or similar to OECD 402, Rabbit, Male, Experimental value)
LC50 inhalation rat (mg/l) : 76 mg/l (Other, 4 h, Rat, Female, Experimental value)
ATE CLP (vapours) : 76 mg/l/4h
ATE CLP (dust,mist) : 76 mg/l/4h

chloroform (67-66-3)
LD50 oral rat : 908 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value)
LD50 dermal rabbit : > 3980 mg/kg bodyweight (24 h, Rabbit, No reliable data available)

Iso-amyl Alcohol (123-51-3)
LD50 oral rat : > 2000 mg/kg (Rat)
LD50 dermal rabbit : 3216 mg/kg (Rabbit)

acetone (67-64-1)
LD50 oral rat : 5800 mg/kg (Equivalent or similar to OECD 401, Rat, Female, Experimental value)
LD50 dermal rabbit : 20000 mg/kg (Equivalent or similar to OECD 402, Rabbit, Male, Experimental value)
LC50 inhalation rat (mg/l) : 76 mg/l (Other, 4 h, Rat, Female, Experimental value)

2-propanol (67-63-0)
LD50 oral rat : 5840 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Experimental value)
LD50 dermal rabbit : 16400 ml/kg (Equivalent or similar to OECD 402, 24 h, Rabbit, Experimental value)
LC50 inhalation rat (ppm) : > 10000 ppm (Equivalent or similar to OECD 403, 6 h, Rat, Male/female, Experimental value)

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity: Not classified

STOT-single exposure: May cause drowsiness or dizziness.

STOT-repeated exposure: Not classified

Aspiration hazard: Not classified

OrganSol Buffer
Viscosity, kinematic: 0.417 mm²/s

Potential adverse human health effects and symptoms: Odour tolerance may develop. Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Repeated exposure may cause skin dryness or cracking. Non-toxic in contact with skin (LD50 skin> 5000 mg/kg). May cause drowsiness or dizziness. Non-toxic by inhalation (LC50 inh, rat > 50 mg/l/4h). Slightly irritant to respiratory organs. Causes serious eye irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general: Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.


Acute aquatic toxicity: Not classified

Chronic aquatic toxicity: Not classified

### OrganSol Buffer

**LC50 fish 1**

5540 mg/l (EU Method C.1, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value)

**EC50 96h algae (1)**

> 7000 mg/l (Selenastrum capricornutum, Static system, Fresh water, Experimental value)

#### hydrogen chloride, conc=36%, aqueous solution (7647-01-0)

**LC50 fish 1**

282 mg/l (96 h, Gambusia affinis)

**EC50 Daphnia 1**

< 56 mg/l (72 h, Daphnia magna)

#### chloroform (67-66-3)

**LC50 fish 1**

0.0024 mg/l (LC50; ASTM; 96 h; Oncorhynchus mykiss; Flow-through system; Fresh water; Experimental value)

**ErC50 (algae)**

13.3 mg/l (Other, 72 h, Chlamydomonas reinhardtii, Static system, Fresh water, Experimental value)

#### Iso-amyl Alcohol (123-51-3)

**LC50 fish 1**

700 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value)

**EC50 Daphnia 1**

255 mg/l (DIN 38412-11, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)

**EC50 72h algae (1)**

> 500 mg/l (DIN 38412-9, Scenedesmus subsricatus, Static system, Fresh water, Experimental value)

#### acetone (67-64-1)

**LC50 fish 1**

5540 mg/l (EU Method C.1, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value)

**EC50 96h algae (1)**

> 7000 mg/l (Selenastrum capricornutum, Static system, Fresh water, Experimental value)

#### 2-propanol (67-63-0)

**LC50 fish 1**

9640 - 10000 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)

### 12.2. Persistence and degradability

**OrganSol Buffer**

Persistence and degradability: Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. No (test)data on mobility of the substance available.

Biochemical oxygen demand (BOD): 1.43 g O₂/g substance

Chemical oxygen demand (COD): 1.92 g O₂/g substance

ThOD: 2.2 g O₂/g substance

BOD (% of ThOD): 0.872 (20 day(s), Literature study)
### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>BCF fish 1</th>
<th>BCF other aquatic organisms 1</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen chloride, conc=36%, aqueous solution (7647-01-0)</td>
<td>0.25 (QSAR)</td>
<td>3 (BCFWIN, Calculated value)</td>
<td>-0.24 (Test data)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>chloroform (67-66-3)</td>
<td>4.1 - 13 (OECD 305: Bioconcentration: Flow-Through Fish Test, 42 day(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value)</td>
<td>1.97 (Experimental value, 20 °C)</td>
<td>Low potential for bioaccumulation (BCF &lt; 500).</td>
<td></td>
</tr>
<tr>
<td>Iso-amyl Alcohol (123-51-3)</td>
<td>1.35 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)</td>
<td></td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
<td></td>
</tr>
<tr>
<td>acetone (67-64-1)</td>
<td>0.69 (Pisces)</td>
<td>3 (BCFWIN, Calculated value)</td>
<td>-0.24 (Test data)</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

### Persistence and degradability

**hydrogen chloride, conc=36%, aqueous solution (7647-01-0)**

- **Persistence and degradability**: Biodegradability: not applicable.
- **Biochemical oxygen demand (BOD)**: Not applicable
- **Chemical oxygen demand (COD)**: Not applicable
- **ThOD**: Not applicable
- **BOD (% of ThOD)**: Not applicable

**chloroform (67-66-3)**

- **Persistence and degradability**: Non degradable in the soil. Not readily biodegradable in water.
- **ThOD**: 0.33 - 1.35 g O₂/g substance
- **BOD (% of ThOD)**: 0.015 - 0.06

**Iso-amyl Alcohol (123-51-3)**

- **Persistence and degradability**: Readily biodegradable in water.
- **Biochemical oxygen demand (BOD)**: 1.6 g O₂/g substance
- **Chemical oxygen demand (COD)**: 2.44 g O₂/g substance
- **ThOD**: 2.74 g O₂/g substance
- **BOD (% of ThOD)**: 0.59

**acetone (67-64-1)**

- **Persistence and degradability**: Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.
- **Biochemical oxygen demand (BOD)**: 1.43 g O₂/g substance
- **Chemical oxygen demand (COD)**: 1.92 g O₂/g substance
- **ThOD**: 2.2 g O₂/g substance
- **BOD (% of ThOD)**: 0.872 (20 day(s), Literature study)

**2-propanol (67-63-0)**

- **Persistence and degradability**: Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.
- **Biochemical oxygen demand (BOD)**: 1.19 g O₂/g substance
- **Chemical oxygen demand (COD)**: 2.23 g O₂/g substance
- **ThOD**: 2.4 g O₂/g substance
- **BOD (% of ThOD)**: 0.69 (Pisces)

**Iso-amyl Alcohol (123-51-3)**

- **Persistence and degradability**: 3 (BCFWIN, Calculated value)
- **Log Pow**: 1.35 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)
- **Bioaccumulative potential**: Low potential for bioaccumulation (Log Kow < 4).
2-propanol (67-63-0)

- Log Pow: 0.05 (Weight of evidence approach, 25 °C)
- Bioaccumulative potential: Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Substance</th>
<th>Surface tension</th>
<th>Log Koc</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>OrgoSol Buffer</td>
<td>0.0237 N/m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrogen chloride, conc=36%, aqueous solution (7647-01-0)</td>
<td>0.0271 N/m (20 °C)</td>
<td>1.8 - 2.6 (log Koc, Other, Experimental value)</td>
<td>No (test)data on mobility of the components available. May be harmful to plant growth, blooming and fruit formation.</td>
</tr>
<tr>
<td>Chloroform (67-66-3)</td>
<td>0.0271 N/m (20 °C)</td>
<td>1.8 - 2.6 (log Koc, Other, Experimental value)</td>
<td>Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.</td>
</tr>
<tr>
<td>Iso-amyl Alcohol (123-51-3)</td>
<td>0.024 N/m (20 °C)</td>
<td>0.73 (log Koc, SRC PCKOCWIN v2.0, QSAR)</td>
<td>Highly mobile in soil.</td>
</tr>
<tr>
<td>Acetone (67-64-1)</td>
<td>0.0237 N/m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Propanol (67-63-0)</td>
<td>0.021 N/m (25 °C)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.5. Results of PBT and vPvB assessment

- OrgoSol Buffer: 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

- Product/Packaging disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into drains or the environment.

Additional information: LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC. Flammable vapours may accumulate in the container.

European List of Waste (LoW) code: 15 01 10* - packaging containing residues of or contaminated by dangerous substances 07 01 04* - other organic solvents, washing liquids and mother liquors

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): 1090
- UN-No. (RID): Not regulated
**14.2. UN proper shipping name**

<table>
<thead>
<tr>
<th>Proper Shipping Name (ADR)</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name (ADN)</td>
<td>Acetone</td>
</tr>
<tr>
<td>Proper Shipping Name (RID)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Transport document description (ADN)</td>
<td>UN 1090 Acetone, 3, II</td>
</tr>
</tbody>
</table>

**14.3. Transport hazard class(es)**

<table>
<thead>
<tr>
<th>Transport hazard class(es) (ADR)</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport hazard class(es) (IMDG)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Transport hazard class(es) (IATA)</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Transport hazard class(es) (ADN)</td>
<td>3</td>
</tr>
<tr>
<td>Danger labels (ADN)</td>
<td>3</td>
</tr>
</tbody>
</table>

**14.4. Packing group**

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

**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**
  Classification code (ADN) | F1 |
  Carriage permitted (ADN) | T |

- **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

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

<table>
<thead>
<tr>
<th>3. Liquid substances or mixtures which are regarded as dangerous in accordance with Directive 1999/45/EC or are fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008</th>
<th>Iso-amyl Alcohol - hydrogen chloride, conc=36%, aqueous solution - chloroform - acetone</th>
</tr>
</thead>
<tbody>
<tr>
<td>3(a) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F</td>
<td>Iso-amyl Alcohol - acetone</td>
</tr>
<tr>
<td>3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10</td>
<td>Iso-amyl Alcohol - hydrogen chloride, conc=36%, aqueous solution - chloroform - acetone</td>
</tr>
<tr>
<td>32. Chloroform</td>
<td>chloroform</td>
</tr>
<tr>
<td>40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.</td>
<td>Iso-amyl Alcohol - acetone</td>
</tr>
</tbody>
</table>

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

VOC content : 100 %

#### 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. 4 (Inhalation) | Acute toxicity (Inhal.), Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Carc. 2 | Carcinogenicity, Category 2 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| Flam. Liq. 3 | Flammable liquids, Category 3 |
| Repr. 2 | Reproductive toxicity, Category 2 |
| Skin Corr. 1A | Skin corrosion/irritation, Category 1A |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| STOT RE 1 | Specific target organ toxicity — Repeated exposure, Category 1 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Narcosis |
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H332 | Harmful if inhaled. |
### OrgoSol Buffer

#### Safety Data Sheet

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

<table>
<thead>
<tr>
<th>H335</th>
<th>May cause respiratory irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td>H351</td>
<td>Suspected of causing cancer.</td>
</tr>
<tr>
<td>H361d</td>
<td>Suspected of damaging the unborn child.</td>
</tr>
<tr>
<td>H372</td>
<td>Causes damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life.</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: FOCUS-Wash
Product code: 335F
Product group: Blend

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)

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 practices.

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

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>
</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. Remove the victim into fresh air.

First-aid measures after skin contact: Wash immediately with lots of water (15 minutes)/shower. Soap may be used. Wash skin with plenty of water.

First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Do not apply neutralizing agents. Rinse eyes with water as a precaution.

First-aid measures after ingestion: Rinse mouth with water. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre (www.big.be/antigif.htm). Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

Symptoms/effects after eye contact: 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


5.2. Special hazards arising from the substance or mixture

Fire hazard: DIRECT FIRE HAZARD: Most organic solids may burn if strongly heated. INDIRECT FIRE HAZARD: Heating increases the fire hazard.

Explosion hazard: DIRECT EXPLOSION HAZARD: Most organic solids are liable to dust explosion hazard. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.

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: have neighbourhood close doors and windows.


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. Mark the danger area. Prevent dust cloud formation, e.g. by wetting. Wash contaminated clothes.

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. Knock down/dilute dust cloud with water spray.

Methods for cleaning up: Take up liquid spill into absorbent material. Stop dust cloud by humidifying. Scoop solid spill 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.

6.4. Reference to other sections

For further information refer to section 13.
FOCUS-Wash
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Avoid raising dust. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

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.

Information on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. water/moisture.

Storage area: Store in a dry area. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials: SUITABLE MATERIAL: synthetic material.

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: Colourless.

Odour: characteristic.

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
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

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available
FOCUS-Wash
Safety Data Sheet

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

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
Product/Packaging disposal recommendations: Remove to an authorized plant for the destruction, neutralization and elimination of hazardous waste.

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

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

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.