Safety Data Sheet

Cat. # 786-259

FOCUS™ Plant Proteome

Size: 25 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>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Belfast Centre)</td>
<td>Grosvenor Road BT12 6BA Belfast</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Royal Victoria Hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre)</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>City Hospital</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gwenwyn Ward, Llandough Hospital</td>
<td></td>
<td></td>
<td></td>
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<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>
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<tr>
<td></td>
<td>Royal Infirmary of Edinburgh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit</td>
<td>Avonley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guy's &amp; St Thomas' Hospital Trust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre)</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin corrosion/irritation, Category 1A  H314
Specific target organ toxicity — Single exposure, Category 3  H335
Respiratory tract irritation
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
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.
- P313 - 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>
</tr>
</thead>
<tbody>
<tr>
<td>Deionized water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>50 - 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>trichloroacetic acid</td>
<td>(CAS-No.) 76-03-9</td>
<td>5 - 10</td>
<td>Skin Corr. 1A, H314 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-927-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 607-004-00-7</td>
<td></td>
<td></td>
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</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</td>
<td>(1 &lt;=C &lt; 100) STOT SE 3, H335</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-927-2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 607-004-00-7</td>
<td></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.

5/11/2017 (Version: 1.1) EN (English) 2/7
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. Wear personal protective equipment. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.

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 cool. Keep container tightly closed.

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>Clear</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>
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<tr>
<td>Relative vapour density at 20 °C</td>
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</tr>
<tr>
<td>Relative density</td>
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<tr>
<td>Solubility</td>
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</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<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>
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<tr>
<td>Oxidising properties</td>
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<tr>
<td>Explosive limits</td>
<td>No data available</td>
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</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>Toxicity</th>
<th>Classification</th>
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</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

**trichloroacetic acid (76-03-9)**

| LD50 oral rat (Rat, Oral)                     | > 5000 mg/kg                |

Skin corrosion/irritation: Causes severe skin burns and eye damage.
**UPPA I**

**Safety Data Sheet**

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

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>trichloroacetic acid (76-03-9)</td>
<td>2B - Possibly carcinogenic to humans</td>
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</table>

**SECTION 12: Ecological information**

12.1. Toxicity

Ecology - general: Toxic to aquatic life with long lasting effects. Toxic to aquatic life.

Acute aquatic toxicity: Not classified

Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>trichloroacetic acid (76-03-9)</td>
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<tr>
<td>LC50 fish 1</td>
<td>2000 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Static system, Fresh water, Weight of evidence)</td>
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<tr>
<td>EC50 Daphnia 1</td>
<td>2000 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
<td>0.46 mg/l (Other, 14 day(s), Chlorella sp., Static system, Fresh water, Experimental value, Nominal concentration)</td>
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12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>trichloroacetic acid (76-03-9)</td>
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</tr>
<tr>
<td>Persistence and degradability</td>
<td>Contains non readily biodegradable component(s).</td>
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</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>trichloroacetic acid (76-03-9)</td>
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</tr>
<tr>
<td>BCF fish 1</td>
<td>0.4 - 1.7 mg/l (6 week(s), Cyprinus carpio, Fresh water, Experimental value)</td>
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<tr>
<td>Log Pow</td>
<td>1.33 (Experimental value)</td>
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<tr>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
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</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>trichloroacetic acid (76-03-9)</td>
<td></td>
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<tr>
<td>Surface tension</td>
<td>0.278 N/m (80 °C)</td>
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<tr>
<td>Log Koc</td>
<td>0 (log Koc, Other, Experimental value)</td>
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<tr>
<td>Ecology - soil</td>
<td>Highly mobile in soil.</td>
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</table>

12.5. Results of PBT and vPvB assessment

Component

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>trichloroacetic acid (76-03-9)</td>
<td></td>
</tr>
<tr>
<td>This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII</td>
<td></td>
</tr>
<tr>
<td>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII</td>
<td></td>
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</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

<table>
<thead>
<tr>
<th>Substance</th>
<th>Value</th>
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<tbody>
<tr>
<td>UN-No. (ADR)</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>
</tbody>
</table>
### UN No.
- **UN-No. (ADN):** Not regulated
- **UN-No. (RID):** Not regulated

### 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

### Transport Hazard Class(es)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Hazard Class(es)</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>

### 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

### Environmental Hazards
- **Dangerous for the environment:** Yes
- **Marine pollutant:** Yes
- **Other information:** No supplementary information available

### 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

### Transport in Bulk According to Annex II of Marpol and the IBC Code
Not applicable

### Regulatory Information
#### Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

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

**National Regulations**
No additional information available
15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 1</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
</tr>
<tr>
<td>STOT SE 3</td>
</tr>
<tr>
<td>H314</td>
</tr>
<tr>
<td>H335</td>
</tr>
<tr>
<td>H400</td>
</tr>
<tr>
<td>H410</td>
</tr>
<tr>
<td>H411</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.
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
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 (EC-No.) 207-838-8 (EC Index-No.) 011-005-00-2</td>
<td>0.05 - 0.5</td>
<td>Acute Tox. 4 (Inhalation:dust.mist), H332 Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

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

4.2. Most important symptoms and effects, both acute and delayed
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: 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
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.
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: 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>
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<td>Colour</td>
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<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>
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<td>Boiling point</td>
<td>No data available</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>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
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<tr>
<td>Relative density</td>
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<tr>
<td>Solubility</td>
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<tr>
<td>Log Pow</td>
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<td>Viscosity, dynamic</td>
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<tr>
<td>Explosive properties</td>
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<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

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

sodium carbonate (497-19-8)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2800 mg/kg (Rat, Male / female, Experimental value, Oral, 14 day(s))</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg (16 CFR 1500. 40, 24 h, Rabbit, Experimental value, Dermal)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>2.3 mg/l (2 h, Rat, Male, Experimental value, Inhalation (aerosol))</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

sodium carbonate (497-19-8)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>300 mg/l (96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Lethal)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>200 - 227 mg/l (48 h, Ceriodaphnia sp., Semi-static system, Fresh water, Experimental value, Locomotor effect)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

sodium carbonate (497-19-8)

Persistence and degradability : Biodegradability: not applicable.
Chemical oxygen demand (COD) : Not applicable (inorganic)
ThOD : Not applicable (inorganic)

12.3. Bioaccumulative potential

sodium carbonate (497-19-8)

Log Pow : -6.19 (Estimated value)
Bioaccumulative potential : Not bioaccumulative.

12.4. Mobility in soil

sodium carbonate (497-19-8)

Ecology - soil : Low potential for adsorption in soil.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Remove to an authorized plant for the destruction, neutralization and elimination of hazardous waste.
UPPA II
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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)

| Transport hazard class(es) (ADR) | : Not regulated |
| Transport hazard class(es) (IMDG) | : Not regulated |
| Transport hazard class(es) (IATA) | : Not regulated |
| Transport hazard class(es) (ADN) | : Not regulated |
| 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
UPPA II
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830


15.1.2. National regulations
No additional information available

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

SECTION 16: Other information

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 4 (Inhalation:dust,mist)</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
</tr>
<tr>
<td>H319</td>
</tr>
<tr>
<td>H332</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 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></td>
<td>Royal Victoria Hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Birmingham Centre)</td>
<td>Dudley Road B18 7QH Birmingham</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>City Hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Cardiff Centre)</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gwernwyn Ward, Llandough Hospital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Royal Infirmary of Edinburgh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit</td>
<td>Avonley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guy's &amp; St Thomas' Hospital Trust</td>
<td></td>
<td></td>
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<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>
<tr>
<td></td>
<td>Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not classified

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

2.2. Label elements

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

Hazardous ingredients: sodium hydroxide

2.3. Other hazards
No additional information available
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>
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<tr>
<td>sodium hydroxide</td>
<td>(CAS-No.) 1310-73-2</td>
<td>0.05 - 0.5</td>
<td>Met. Corr. 1, H290 Skin Corr. 1A, H314</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 215-185-5</td>
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<tr>
<td></td>
<td>(EC Index-No.) 011-002-00-6</td>
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Specific concentration limits:

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<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</td>
<td>(0.5 =&lt;C &lt; 2) Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 215-185-5</td>
<td>(0.5 =&lt;C &lt; 2) Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 011-002-00-6</td>
<td>(2 =&lt;C &lt; 5) Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5 =&lt;C &lt; 100) 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
sodium hydroxide (1310-73-2)

United Kingdom - Occupational Exposure Limits

| WEL STEL (mg/m³) | 2 mg/m³ |

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

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

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

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
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<td>Odour</td>
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<td>Odour threshold</td>
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<td>pH</td>
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<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
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</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
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<td>Freezing point</td>
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<td>Boiling point</td>
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<td>Flash point</td>
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<tr>
<td>Auto-ignition temperature</td>
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</tr>
<tr>
<td>Decomposition temperature</td>
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</tr>
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<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
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<tr>
<td>Vapour pressure</td>
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<td>Relative vapour density at 20 °C</td>
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<td>Log Pow</td>
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<td>Viscosity, dynamic</td>
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<td>Explosive properties</td>
<td>No data available</td>
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<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
Perfect Focus Buffer I
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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>Acute toxicity (oral)</th>
<th>Not classified</th>
</tr>
</thead>
<tbody>
<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>
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<tr>
<td>Germ cell mutagenicity</td>
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<tr>
<td>Carcinogenicity</td>
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<td>Reproductive toxicity</td>
<td>Not classified</td>
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<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity

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

<table>
<thead>
<tr>
<th>sodium hydroxide (1310-73-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
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<th>sodium hydroxide (1310-73-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
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<td>ThOD</td>
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12.3. Bioaccumulative potential

<table>
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<tbody>
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<td>Bioaccumulative potential</td>
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</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>sodium hydroxide (1310-73-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - 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


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

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

15.1.2. National regulations
No additional information available

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

SECTION 16: Other information

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
</tr>
<tr>
<td>Met. Corr. 1</td>
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<tr>
<td>Skin Corr. 1A</td>
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<tr>
<td>Skin Corr. 1B</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
</tr>
<tr>
<td>H290</td>
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<tr>
<td>H314</td>
</tr>
<tr>
<td>H315</td>
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<tr>
<td>H319</td>
</tr>
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</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
6.1.1. For non-emergency personnel
Emergency procedures: Ventilate spillage area.

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

6.2. Environmental precautions
Avoid release to the environment.

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

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

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

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

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
No additional information available

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

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

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

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Physical state: Liquid
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>Property</th>
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<tr>
<td>Colour</td>
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<tr>
<td>Odour</td>
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<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>
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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>
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<td>Log Pow</td>
<td>No data available</td>
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<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
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<tr>
<td>Viscosity, dynamic</td>
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<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable under normal conditions.

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

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

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral) : Not classified
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
2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)
Persistence and degradability
Biodegradability in water: no data available.

12.3. Bioaccumulative potential
2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1)
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

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

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>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: SEED
- EC-No.: 232-686-4
- CAS-No.: 9005-84-9
- Product code: 099S
- Type of product: Pure substance
- Formula: (C6H10O5)n
- Synonyms:
  - alpha-amylodextrin
  - amylodextrin
  - amylogen
  - dextrin, amylol
  - kordek
  - potato starch
  - soluble starch
  - stabilose AO
  - stabilose K
  - starch from potatoes
  - starch soluble
  - zulkovsky starch
- Product group: Trade product
- BIG No.: 30550

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

<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; 98</td>
<td>Not classified</td>
</tr>
<tr>
<td>Starch</td>
<td>(CAS-No.) 9005-84-9 (EC-No.) 232-686-4</td>
<td>&lt; 2</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
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.

First-aid measures after ingestion


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

Symptoms/effects after inhalation

AFTER INHALATION OF DUST/MIST: Coughing.

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media


Unsuitable extinguishing media

Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

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.

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.

Protection during firefighting

Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment


Emergency procedures

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

Measures in case of dust release


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.

5/11/2017 (Version: 1.1)
SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

Heat and ignition sources:
- KEEP SUBSTANCE AWAY FROM: heat sources. Ignition sources.

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

**SEED (9005-84-9)**

**United Kingdom - Occupational Exposure Limits**

- WEL TWA (mg/m³)
  - SEED: 10 mg/m³
  - Starch: 10 mg/m³

**Starch (9005-84-9)**

**United Kingdom - Occupational Exposure Limits**

- WEL TWA (mg/m³)
  - SEED: 4 mg/m³
  - Starch: 4 mg/m³

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

**Colour**
- White.

**Odour**
- Odourless.

**Odour threshold**
- No data available
SEED
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

pH : 4 - 7.5 (2 %)
Relative evaporation rate (butylacetate=1) : No data available
Melting point : No data available
Freezing point : Not applicable
Boiling point : No data available
Flash point : Not applicable
Auto-ignition temperature : > 380 °C
Decomposition temperature : No data available
Flammability (solid, gas) : Non flammable.
Vapour pressure : No data available
Relative vapour density at 20 °C : Not applicable
Relative density : 1.5
Density : 1500 kg/m³
Solubility : Moderately soluble in water. Substance sinks in water.
Water: 5 g/100ml (90 °C)
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 : Not applicable

9.2. Other information
VOC content : 0 %

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
Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified
Skin corrosion/irritation : Not classified
pH: 4 - 7.5 (2 %)
Serious eye damage/irritation : Not classified
pH: 4 - 7.5 (2 %)
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 : 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>Substance</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
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

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

VOC content : 0 %

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

<table>
<thead>
<tr>
<th>Product form</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Diluent III</td>
</tr>
<tr>
<td>Product code</td>
<td>159D</td>
</tr>
<tr>
<td>Product group</td>
<td>Blend</td>
</tr>
</tbody>
</table>

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

1.2.1. Relevant identified uses

Main use category: Research purposes

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

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

 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>
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<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 general

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.

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.

First-aid measures after ingestion:

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>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

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

10.2. Chemical stability
Stable under normal conditions.
10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

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

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
- Acute toxicity (oral): Not classified
- 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 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>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

Product form : Mixture
Product name : FOCUS Protein Solubilization Buffer
Product code : 265F
Product group : Trade product

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

1.2.1. Relevant uses

Main use category : Research purposes

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

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

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

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. May cause cancer. Harmful to aquatic life.
2.2. Label elements

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

Hazard pictograms (CLP):

- GHS08
- GHS09

CLP Signal word: Warning

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>
</tr>
</thead>
<tbody>
<tr>
<td>urea</td>
<td>(CAS-No.) 57-13-6 (EC-No.) 200-315-5</td>
<td>50 - 80</td>
<td>Not classified</td>
</tr>
<tr>
<td>thiourea</td>
<td>(CAS-No.) 62-56-6 (EC-No.) 200-543-5 (EC Index-No.) 612-082-00-0</td>
<td>10 - 50</td>
<td>Acute Tox. 4 (Oral), H302 Carc. 2, H351 Repr. 2, H361d Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td>1-(3-sulfonatopropyl)pyridinium</td>
<td>(CAS-No.) 15471-17-7 (EC-No.) 239-491-3</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 general: IF exposed or concerned: Get medical advice/attention.

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

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

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

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

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media


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: 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. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. 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.

Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Separate working clothes from town clothes. Launder separately.

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

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.
**FOCUS Protein Solubilization Buffer**

**Safety Data Sheet**

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

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### 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>Solid</td>
</tr>
<tr>
<td>Colour</td>
<td>White</td>
</tr>
<tr>
<td>Odour</td>
<td>Mild odour.</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>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>Not applicable</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>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not applicable</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>Not applicable</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>Parameter</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>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>Suspected of causing cancer.</td>
</tr>
</tbody>
</table>

---

*thiourea (62-56-6)*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2000 - 2500 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2800 mg/kg (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Experimental value, Dermal)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 0.195 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol))</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

Reproductive toxicity: Suspected of damaging fertility or the unborn child.
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

<table>
<thead>
<tr>
<th>Ecology - general</th>
<th>Toxic to aquatic life with long lasting effects. Harmful to aquatic life.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute aquatic toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>LC50 fish 1</th>
<th>&gt; 6810 mg/l (96 h, Leuciscus idus, Experimental value, Nominal concentration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>&gt; 10000 mg/l (DIN 38412-11, 24 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>LC50 fish 1</th>
<th>&gt; 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, GLP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50 Daphnia 1</td>
<td>35 mg/l (48 h, Daphnia magna)</td>
</tr>
<tr>
<td>EC50 72h algae (1)</td>
<td>3.8 - 10 mg/l (Scenedesmus subspicatus)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

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

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
<th>Readily biodegradable in water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ThOD</td>
<td>0.27 g O₂/g substance</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
<th>Non degradable in the soil. Not readily biodegradable in water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.013 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>0.84 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>2.42 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Persistence and degradability</th>
<th>Biodegradability in water: no data available.</th>
</tr>
</thead>
</table>

#### 12.3. Bioaccumulative potential

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

<table>
<thead>
<tr>
<th>BCF fish 1</th>
<th>1 (72 h, Brachydianio rerio, Fresh water, Literature study)</th>
</tr>
</thead>
<tbody>
<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>BCF fish 1</th>
<th>&lt; 2 (Equivalent or similar to OECD 305, 6 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value)</th>
</tr>
</thead>
<tbody>
<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, 20 °C)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>
1-(3-sulfonatopropyl)pyridinium (15471-17-7)

Bioaccumulative potential: No bioaccumulation data available.

12.4. Mobility in soil

urea (57-13-6)

Log Koc: -1.43 - -1.19 (log Koc, Calculated value)

Ecology - soil: Highly mobile in soil.

thiourea (62-56-6)

Surface tension: 65.4 mN/m (20 °C, 1 g/l, OECD 115: Surface Tension of Aqueous Solutions)

Ecology - soil: Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

Component

urea (57-13-6): 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

thiourea (62-56-6): This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods


SECTION 14: Transport information

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

14.1. UN number

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

14.2. UN proper shipping name

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

14.3. Transport hazard class(es)

| ADR | Transport hazard class(es) (ADR) | : Not regulated |
| IMDG | Transport hazard class(es) (IMDG) | : Not regulated |
| IATA | Transport hazard class(es) (IATA) | : Not regulated |
| ADN | Transport hazard class(es) (ADN) | : Not regulated |
| 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

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>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral), Category 4</th>
</tr>
</thead>
<tbody>
<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>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
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: OrgoSol Buffer
Product code: 283O
Product group: Blend
BIG No: 10001

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) Gwerwyn Ward, Llandough Hospital</td>
<td>Penarth CF64 2XX Cardiff</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh</td>
<td>Little France Crescent EH16 4SA Edinburgh</td>
<td>0344 892 0111</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Guy's &amp; St Thomas' Poisons Unit Medical Toxicology Unit, Guy's &amp; St Thomas' Hospital Trust</td>
<td>Avonley Road SE14 5ER London</td>
<td>+44 20 7188 7188</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit</td>
<td>Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle</td>
<td>0344 892 0111</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

- 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. Continue rinsing.
- 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.
- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
- P403+P370 - Store in a well ventilated place. Keep cool.
- 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
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></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 (EC-No.) 204-633-5</td>
<td>&lt; 0.05</td>
<td>Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 STOT SE 3, H335</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 (EC-No.) 200-663-8</td>
<td>&lt; 0.05</td>
<td>Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 Repr. 2, H361d STOT RE 1, H372 Aquatic Acute 1, H400 (M=100)</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 (EC-No.) 200-661-7</td>
<td>&lt; 0.05</td>
<td>Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336</td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 603-117-00-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hydrogen chloride, conc=36%, aqueous solution</td>
<td>(CAS-No.) 7647-01-0 (EC-No.) 231-595-7 (EC Index-No.) 017-002-01-X</td>
<td>&lt; 0.05</td>
<td>Skin Corr. 1A, H314 STOT SE 3, H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></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 (EC-No.) 231-595-7 (EC Index-No.) 017-002-01-X</td>
<td>(10 &lt;=C &lt; 25) Eye Irrit. 2, H319 (10 &lt;=C &lt; 25) Skin Irrit. 2, H315 (10 &lt;=C &lt; 100) STOT SE 3, H335 (25 &lt;=C &lt; 100) Skin Corr. 1B, H314</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

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

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

First-aid measures after skin contact: Rinse skin with water/shower. Take off immediately all contaminated clothing.

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

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: Dry skin. 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

Fire hazard: Highly flammable liquid and vapour.

Explosion hazard: DIRECT EXPLOSION HAZARD: Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD: Heat may cause pressure rise in tanks/drums: 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.

5.3. Advice for firefighters

Firefighting instructions: Cool tanks/drums 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: persistant risk of physical explosion.

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Emergency procedures: Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

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.
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. 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
: 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
Storage temperature
: 15 - 20 °C
Heat and ignition sources
: KEEP SUBSTANCE AWAY FROM: heat sources. Ignition sources.
Information on mixed storage
(strong) bases. halogens. amines.
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
bronze. glass. MATERIAL TO AVOID: synthetic material.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
OrgoSol Buffer

EU - Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOELV TWA (mg/m³)</td>
<td>1210 mg/m³</td>
</tr>
<tr>
<td>IOELV TWA (ppm)</td>
<td>500 ppm</td>
</tr>
</tbody>
</table>

United Kingdom - Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL TWA (mg/m³)</td>
<td>1210 mg/m³</td>
</tr>
<tr>
<td>WEL TWA (ppm)</td>
<td>500 ppm</td>
</tr>
<tr>
<td>WEL STEL (mg/m³)</td>
<td>3620 mg/m³</td>
</tr>
<tr>
<td>WEL STEL (ppm)</td>
<td>1500 ppm</td>
</tr>
</tbody>
</table>

chloroform (67-66-3)

EU - Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOELV TWA (mg/m³)</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>IOELV TWA (ppm)</td>
<td>2 ppm</td>
</tr>
</tbody>
</table>

United Kingdom - Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL TWA (mg/m³)</td>
<td>9.9 mg/m³</td>
</tr>
</tbody>
</table>

5/11/2017 (Version: 1.3)  EN (English)  4/13
### Iso-amyl Alcohol (123-51-3)

**United Kingdom - Occupational Exposure Limits**

<table>
<thead>
<tr>
<th>Exposure</th>
<th>WEL TWA (mg/m³)</th>
<th>WEL TWA (ppm)</th>
<th>WEL STEL (mg/m³)</th>
<th>WEL STEL (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>366 mg/m³</td>
<td>100 ppm</td>
<td>458 mg/m³</td>
<td>125 ppm</td>
</tr>
</tbody>
</table>

**EU - Occupational Exposure Limits**

- **WEL TWA (mg/m³)**: 366 mg/m³
- **WEL TWA (ppm)**: 100 ppm

### Acetone (67-64-1)

**EU - Occupational Exposure Limits**

- **IOELV TWA (mg/m³)**: 1210 mg/m³
- **IOELV TWA (ppm)**: 500 ppm

**United Kingdom - Occupational Exposure Limits**

<table>
<thead>
<tr>
<th>Exposure</th>
<th>WEL TWA (mg/m³)</th>
<th>WEL TWA (ppm)</th>
<th>WEL STEL (mg/m³)</th>
<th>WEL STEL (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>1210 mg/m³</td>
<td>500 ppm</td>
<td>3620 mg/m³</td>
<td>1500 ppm</td>
</tr>
</tbody>
</table>

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

**United Kingdom - Occupational Exposure Limits**

<table>
<thead>
<tr>
<th>Exposure</th>
<th>WEL TWA (mg/m³)</th>
<th>WEL TWA (ppm)</th>
<th>WEL STEL (mg/m³)</th>
<th>WEL STEL (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>999 mg/m³</td>
<td>400 ppm</td>
<td>1250 mg/m³</td>
<td>500 ppm</td>
</tr>
</tbody>
</table>

### OrgoSol Buffer

#### 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 aqua (freshwater)**: 10.6 mg/l
- **PNEC aqua (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)

- **PNEC sewage treatment plant**: 100 mg/l

### 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>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<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>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>-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>Water: complete</td>
<td></td>
</tr>
<tr>
<td>Ethanol: complete</td>
<td></td>
</tr>
<tr>
<td>Ether: complete</td>
<td></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>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>2 - 12.8 vol %</td>
</tr>
<tr>
<td></td>
<td>60 - 310 g/m³</td>
</tr>
<tr>
<td>Lower explosive limit (LEL)</td>
<td>2 vol %</td>
</tr>
<tr>
<td>Upper explosive limit (UEL)</td>
<td>12.8 vol %</td>
</tr>
</tbody>
</table>

9.2. Other information

Specific conductivity : 6000000 pS/m (25 °C)
**OrgoSol Buffer**

**Safety Data Sheet**

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

<table>
<thead>
<tr>
<th>Saturation concentration</th>
<th>589 g/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC content</td>
<td>100 %</td>
</tr>
<tr>
<td>Other properties</td>
<td>Gas/vapour heavier than air at 20°C. Clear. Highly volatile. Neutral reaction.</td>
</tr>
</tbody>
</table>

---

**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**

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>5800 mg/kg (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>20000 mg/kg (Equivalent or similar to OECD 402, Rabbit, Male, Experimental value, Dermal)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>76 mg/l (Other, 4 h, Rat, Female, Experimental value, Inhalation (vapours))</td>
</tr>
<tr>
<td>ATE CLP (vapours)</td>
<td>76 mg/l/4h</td>
</tr>
<tr>
<td>ATE CLP (dust,mist)</td>
<td>76 mg/l/4h</td>
</tr>
</tbody>
</table>

---

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

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>908 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 3980 mg/kg bodyweight (24 h, Rabbit, No reliable data available, Dermal)</td>
</tr>
</tbody>
</table>

---

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

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>5800 mg/kg (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>20000 mg/kg (Equivalent or similar to OECD 402, Rabbit, Male, Experimental value, Dermal)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>76 mg/l (Other, 4 h, Rat, Female, Experimental value, Inhalation (vapours))</td>
</tr>
</tbody>
</table>

---

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

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>5840 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Experimental value, Oral, 14 day(s))</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>16400 ml/kg (Equivalent or similar to OECD 402, 24 h, Rabbit, Experimental value, Dermal, 14 day(s))</td>
</tr>
<tr>
<td>LC50 inhalation rat (ppm)</td>
<td>&gt; 10000 ppm (Equivalent or similar to OECD 403, 6 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))</td>
</tr>
</tbody>
</table>

**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
**OrgoSol Buffer**

**Safety Data Sheet**

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

<table>
<thead>
<tr>
<th>STOT-single exposure</th>
<th>May cause drowsiness or dizziness.</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

### 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.
- **Ecology - air**: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

#### Acute aquatic toxicity

- Not classified

#### Chronic aquatic toxicity

- Not classified

### OrgoSol Buffer

| Viscosity, kinematic | 0.417 mm²/s |

#### 12.2. Toxification

**LC50 fish 1**

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

**EC50 96h algae (1)**

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

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

- **LC50 fish 1**: 282 mg/l (96 h, Gambusia affinis, Pure substance)
- **EC50 Daphnia 1**: < 56 mg/l (72 h, Daphnia magna, Pure substance)

#### 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 subspicatus, Static system, Fresh water, Experimental value, Growth rate)

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

- **LC50 fish 1**: 5540 mg/l (EU Method C.1, 96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Nominal concentration)
- **EC50 96h algae (1)**: > 7000 mg/l (Selenastrum capricornutum, Static system, Fresh water, Experimental value, Nominal concentration)

#### 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, Lethal)
### 12.2. Persistence and degradability

**OrgoSol Buffer**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. No (test)data on mobility of the substance available.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>1.43 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>1.92 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>2.2 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.872 (20 day(s), Literature study)</td>
</tr>
</tbody>
</table>

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

<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>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Non degradable in the soil. Not readily biodegradable in water.</td>
</tr>
<tr>
<td>ThOD</td>
<td>0.33 - 1.35 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.015 - 0.06</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable in water.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>1.6 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>2.44 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>2.74 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.59</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>1.43 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>1.92 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>2.2 g O₂/g substance</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>0.872 (20 day(s), Literature study)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. Readily biodegradable in water.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>1.19 g O₂/g substance</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>2.23 g O₂/g substance</td>
</tr>
<tr>
<td>ThOD</td>
<td>2.4 g O₂/g substance</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

**OrgoSol Buffer**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>0.69 (Pisces)</td>
</tr>
<tr>
<td>BCF other aquatic organisms 1</td>
<td>3 (BCFWIN, Calculated value)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-0.24 (Test data)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>
## hydrogen chloride, conc=36%, aqueous solution (7647-01-0)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>0.25 (QSAR)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
</tr>
</tbody>
</table>

## chloroform (67-66-3)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</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>
</tr>
<tr>
<td>Log Pow</td>
<td>1.97 (Experimental value, 20 °C)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (BCF &lt; 500).</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>1.35 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
</tr>
</tbody>
</table>

## acetone (67-64-1)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>0.69 (Pisces)</td>
</tr>
<tr>
<td>BCF other aquatic organisms 1</td>
<td>3 (BCFWIN, Calculated value)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-0.24 (Test data)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>0.05 (Weight of evidence approach, 25 °C)</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

**OrgoSol Buffer**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>0.0237 N/m</td>
</tr>
<tr>
<td>Ecology - soil</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
<td>No (test)data on mobility of the components available. May be harmful to plant growth, blooming and fruit formation.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>0.0271 N/m (20 °C)</td>
</tr>
<tr>
<td>Log Koc</td>
<td>1.8 - 2.6 (log Koc, Other, Experimental value)</td>
</tr>
<tr>
<td>Ecology - soil</td>
<td>Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>0.024 N/m (20 °C)</td>
</tr>
<tr>
<td>Log Koc</td>
<td>0.73 (log Koc, SRC PCKOCWIN v2.0, QSAR)</td>
</tr>
<tr>
<td>Ecology - soil</td>
<td>Highly mobile in soil.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface tension</td>
<td>0.0237 N/m</td>
</tr>
<tr>
<td>Ecology - soil</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>
2-propanol (67-63-0)

Surface tension
0.021 N/m (25 °C)

Log Koc
0.185 - 0.541 (log Koc, SRC PCOCWIN v2.0, Calculated value)

Ecology - soil
Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

OrgoSol Buffer
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods:
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:
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) : UN 1090
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) : Acetone
Proper Shipping Name (RID) : Not regulated

Transport document description (ADN) : UN 1090 Acetone, 3, II

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) : 3
Danger labels (ADN) : 3
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) : II
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
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>Reference code</th>
<th>Applicable on</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Iso-amyl Alcohol ; hydrogen chloride, conc=36% , aqueous solution ; chloroform ; acetone</td>
</tr>
<tr>
<td>3(a)</td>
<td>Iso-amyl Alcohol ; acetone</td>
</tr>
<tr>
<td>3(b)</td>
<td>Iso-amyl Alcohol ; hydrogen chloride, conc=36% , aqueous solution ; chloroform ; acetone</td>
</tr>
<tr>
<td>32.</td>
<td>chloroform</td>
</tr>
<tr>
<td>40.</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

<table>
<thead>
<tr>
<th>Full text of H- and EUH-statements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3 (Inhalation)</td>
</tr>
<tr>
<td>Acute Tox. 4 (Inhalation)</td>
</tr>
<tr>
<td>Acute Tox. 4 (Oral)</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
</tr>
<tr>
<td>Carc. 2</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
</tr>
<tr>
<td>Repr. 2</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
</tr>
<tr>
<td>STOT RE 1</td>
</tr>
<tr>
<td>STOT SE 3</td>
</tr>
<tr>
<td>STOT SE 3</td>
</tr>
<tr>
<td>H225</td>
</tr>
<tr>
<td>H226</td>
</tr>
<tr>
<td>H302</td>
</tr>
<tr>
<td>H314</td>
</tr>
<tr>
<td>H315</td>
</tr>
<tr>
<td>H319</td>
</tr>
<tr>
<td>H331</td>
</tr>
<tr>
<td>H332</td>
</tr>
<tr>
<td>H335</td>
</tr>
<tr>
<td>H336</td>
</tr>
<tr>
<td>H351</td>
</tr>
<tr>
<td>H361d</td>
</tr>
<tr>
<td>H372</td>
</tr>
<tr>
<td>H400</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-Wash
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-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 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 general:
- Check the vital functions. Unconscious: maintain adequate airway and respiration.
- Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation.

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

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.
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.
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>
</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>Toxicity (oral)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
FOCUS-Wash
Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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

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
FOCUS-Wash
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
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.