SAFETY DATA SHEET

PicoMaxx High Fidelity PCR System, Part Number 600424

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

1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Part No. (Kit)</th>
<th>Part No.</th>
<th>Part No. (Kit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>600424</td>
<td>600424-51</td>
<td>600420-52</td>
</tr>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Identified uses</th>
<th>Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical reagent.</td>
<td>0.4 ml (1000 U 2.5 U/µl)</td>
</tr>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>1 ml</td>
</tr>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td></td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS: pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation): CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Product definition</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Mixture</td>
</tr>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td></td>
</tr>
</tbody>
</table>

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.

Ingredients of unknown toxicity

<table>
<thead>
<tr>
<th>Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%</td>
</tr>
<tr>
<td>Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%</td>
</tr>
<tr>
<td>Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%</td>
</tr>
</tbody>
</table>

Ingredients of unknown ecotoxicity

| Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2% |

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SECTION 2: Hazards identification

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Hazard statements</th>
<th>Precautionary statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>No known significant effects or critical hazards.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Precautionary statements:

- Prevention: Not applicable.
- Response: Not applicable.
- Storage: Not applicable.
- Disposal: Not applicable.

Hazardous ingredients:

- PicoMaxx High Fidelity PCR System: Not applicable.
- 10X PicoMaxx Reaction Buffer: Not applicable.

Supplemental label elements:

- PicoMaxx High Fidelity PCR System: Safety data sheet available on request.
- 10X PicoMaxx Reaction Buffer: Safety data sheet available on request.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

- PicoMaxx High Fidelity PCR System: Not applicable.
- 10X PicoMaxx Reaction Buffer: Not applicable.

Special packaging requirements:

- PicoMaxx High Fidelity PCR System: Not applicable.
- 10X PicoMaxx Reaction Buffer: Not applicable.

2.3 Other hazards

Other hazards which do not result in classification:

- PicoMaxx High Fidelity PCR System: None known.
- 10X PicoMaxx Reaction Buffer: None known.
SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>CAS: 9036-19-5</td>
<td>&lt;1</td>
<td>Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411</td>
<td>[1][5]</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[5] Substance of equivalent concern
[6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : PicoMaxx High Fidelity PCR System
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : PicoMaxx High Fidelity PCR System
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : PicoMaxx High Fidelity PCR System
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
SECTION 4: First aid measures

Ingestion:
- **PicoMaxx High Fidelity PCR System**
  - Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
- **10X PicoMaxx Reaction Buffer**
  - Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protection of first-aiders:
- **PicoMaxx High Fidelity PCR System**
  - No action shall be taken involving any personal risk or without suitable training.
- **10X PicoMaxx Reaction Buffer**
  - No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

**Potential acute health effects**

**Eye contact**:
- **PicoMaxx High Fidelity PCR System**
  - No known significant effects or critical hazards.
- **10X PicoMaxx Reaction Buffer**
  - No known significant effects or critical hazards.

**Inhalation**:
- **PicoMaxx High Fidelity PCR System**
  - No known significant effects or critical hazards.
- **10X PicoMaxx Reaction Buffer**
  - No known significant effects or critical hazards.

**Skin contact**:
- **PicoMaxx High Fidelity PCR System**
  - No known significant effects or critical hazards.
- **10X PicoMaxx Reaction Buffer**
  - No known significant effects or critical hazards.

**Ingestion**:
- **PicoMaxx High Fidelity PCR System**
  - No known significant effects or critical hazards.
- **10X PicoMaxx Reaction Buffer**
  - No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact**:
- **PicoMaxx High Fidelity PCR System**
  - No specific data.
- **10X PicoMaxx Reaction Buffer**
  - No specific data.

**Inhalation**:
- **PicoMaxx High Fidelity PCR System**
  - No specific data.
- **10X PicoMaxx Reaction Buffer**
  - No specific data.

**Skin contact**:
- **PicoMaxx High Fidelity PCR System**
  - No specific data.
- **10X PicoMaxx Reaction Buffer**
  - No specific data.

**Ingestion**:
- **PicoMaxx High Fidelity PCR System**
  - No specific data.
- **10X PicoMaxx Reaction Buffer**
  - No specific data.

4.3 Indication of any immediate medical attention and special treatment needed
SECTION 4: First aid measures

Notes to physician

PicoMaxx High Fidelity PCR System
10X PicoMaxx Reaction Buffer
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments

PicoMaxx High Fidelity PCR System
10X PicoMaxx Reaction Buffer
No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

PicoMaxx High Fidelity PCR System
10X PicoMaxx Reaction Buffer
Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media

PicoMaxx High Fidelity PCR System
10X PicoMaxx Reaction Buffer
None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

PicoMaxx High Fidelity PCR System
10X PicoMaxx Reaction Buffer
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- halogenated compounds
- metal oxide/oxides

In a fire or if heated, a pressure increase will occur and the container may burst.

5.3 Advice for firefighters

Special precautions for fire-fighters

PicoMaxx High Fidelity PCR System
10X PicoMaxx Reaction Buffer
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

PicoMaxx High Fidelity PCR System
10X PicoMaxx Reaction Buffer
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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30/06/2017
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- PicoMaxx High Fidelity PCR System: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spill material. Put on appropriate personal protective equipment.
- 10X PicoMaxx Reaction Buffer: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spill material. Put on appropriate personal protective equipment.

For emergency responders:
- PicoMaxx High Fidelity PCR System: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- 10X PicoMaxx Reaction Buffer: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions:
- PicoMaxx High Fidelity PCR System: Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- 10X PicoMaxx Reaction Buffer: Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up:
- PicoMaxx High Fidelity PCR System: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- 10X PicoMaxx Reaction Buffer: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections:
- See Section 1 for emergency contact information.
- See Section 8 for information on appropriate personal protective equipment.
- See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures:
- PicoMaxx High Fidelity PCR System: Put on appropriate personal protective equipment (see Section 8).
- 10X PicoMaxx Reaction Buffer: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene:
- PicoMaxx High Fidelity PCR System: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- 10X PicoMaxx Reaction Buffer: Eating, drinking and smoking should be prohibited in areas...
SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

Buffer

Storage : PicoMaxx High Fidelity PCR System
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

10X PicoMaxx Reaction Buffer
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations : PicoMaxx High Fidelity PCR System
Industrial applications, Professional applications.

10X PicoMaxx Reaction Buffer
Industrial applications, Professional applications.

Industrial sector specific solutions : PicoMaxx High Fidelity PCR System
Not applicable.

10X PicoMaxx Reaction Buffer
Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System Glycerol</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m³ 8 hours. Form: Mist</td>
</tr>
</tbody>
</table>

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
SECTION 8: Exposure controls/personal protection

DNELs/DMELs
No DNELs/DMELs available.

PNECs
No PNECs available

8.2 Exposure controls

Appropriate engineering controls

- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection
Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state
- PicoMaxx High Fidelity PCR System: Liquid.
- 10X PicoMaxx Reaction Buffer: Liquid.

Colour
- PicoMaxx High Fidelity PCR System: Not available.
- 10X PicoMaxx Reaction Buffer: Not available.

Odour
- PicoMaxx High Fidelity PCR System: Not available.
- 10X PicoMaxx Reaction Buffer: Not available.
## SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>PicoMaxx High Fidelity PCR System</th>
<th>10X PicoMaxx Reaction Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>8.83</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 30/06/2017
## SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>PicoMaxx High Fidelity PCR System</th>
<th>10X PicoMaxx Reaction Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 9.2 Other information
No additional information.

## SECTION 10: Stability and reactivity

<table>
<thead>
<tr>
<th>Section</th>
<th>PicoMaxx High Fidelity PCR System</th>
<th>10X PicoMaxx Reaction Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Reactivity</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>10.2 Chemical stability</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>10.3 Possibility of hazardous reactions</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>10.4 Conditions to avoid</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>10.5 Incompatible materials</td>
<td>May react or be incompatible with oxidising materials.</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
<tr>
<td>10.6 Hazardous decomposition products</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 30/06/2017
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Trometamol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Acute toxicity estimates

Not available.

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1%</td>
<td>-</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>25 Percent</td>
<td>-</td>
</tr>
<tr>
<td>Trometamol</td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>Trometamol</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

PicoMaxx High Fidelity PCR System
Routes of entry anticipated: Oral, Dermal, Inhalation.

10X PicoMaxx Reaction Buffer
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : PicoMaxx High Fidelity PCR System
No known significant effects or critical hazards.

10X PicoMaxx Reaction Buffer
No known significant effects or critical hazards.

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**SECTION 11: Toxicological information**

| Ingestion | PicoMaxx High Fidelity PCR System | No known significant effects or critical hazards. |
| Skin contact | PicoMaxx High Fidelity PCR System | No known significant effects or critical hazards. |
| Skin contact | 10X PicoMaxx Reaction Buffer | No known significant effects or critical hazards. |
| Skin contact | No known significant effects or critical hazards. |

| Eye contact | PicoMaxx High Fidelity PCR System | No known significant effects or critical hazards. |
| Eye contact | 10X PicoMaxx Reaction Buffer | No known significant effects or critical hazards. |
| Eye contact | No known significant effects or critical hazards. |

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

| Inhalation | PicoMaxx High Fidelity PCR System | No specific data. |
| Skin contact | PicoMaxx High Fidelity PCR System | No specific data. |
| Skin contact | 10X PicoMaxx Reaction Buffer | No specific data. |
| Skin contact | No specific data. |

| Eye contact | PicoMaxx High Fidelity PCR System | No specific data. |
| Eye contact | 10X PicoMaxx Reaction Buffer | No specific data. |
| Eye contact | No specific data. |

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Short term exposure**

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Long term exposure**

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Potential chronic health effects**

| General | PicoMaxx High Fidelity PCR System | No known significant effects or critical hazards. |
| Carcinogenicity | PicoMaxx High Fidelity PCR System | No known significant effects or critical hazards. |
| Carcinogenicity | 10X PicoMaxx Reaction Buffer | No known significant effects or critical hazards. |
| Mutagenicity | PicoMaxx High Fidelity PCR System | No known significant effects or critical hazards. |
| Mutagenicity | 10X PicoMaxx Reaction Buffer | No known significant effects or critical hazards. |
SECTION 11: Toxicological information

Teratogenicity: PicoMaxx High Fidelity PCR System No known significant effects or critical hazards.
10X PicoMaxx Reaction Buffer No known significant effects or critical hazards.

Developmental effects: PicoMaxx High Fidelity PCR System No known significant effects or critical hazards.
10X PicoMaxx Reaction Buffer No known significant effects or critical hazards.

Fertility effects: PicoMaxx High Fidelity PCR System No known significant effects or critical hazards.
10X PicoMaxx Reaction Buffer No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Acute EC50 210 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-{(1,1,3, 3-tetramethylbutyl)phenyl}-.omega.-hydroxy-</td>
<td>Acute LC50 10800 μg/l Marine water</td>
<td>Crustaceans - Pandalus montagui - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 8600 to 9800 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 7200 μg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

10X PicoMaxx Reaction Buffer

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trometamol</td>
<td>Acute EC50 &gt;980 mg/l Fresh water</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute NOEC 520 mg/l Fresh water</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>3.77</td>
<td>78.67</td>
<td>low</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-{(1,1,3, 3-tetramethylbutyl)phenyl}-.omega.-hydroxy-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10X PicoMaxx Reaction Buffer

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trometamol</td>
<td>-1.56</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Mobility : Not available.

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SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

14.6 Special precautions for user

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Intrinsic property</th>
<th>Status</th>
<th>Reference number</th>
<th>Date of revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>PicoMaxx High Fidelity PCR System</td>
<td>Substance of equivalent concern for environment</td>
<td>Recommended</td>
<td>ED/169/2012</td>
<td>2/10/2014</td>
</tr>
</tbody>
</table>

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SECTION 15: Regulatory information

<table>
<thead>
<tr>
<th>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</th>
<th>PicoMaxx High Fidelity PCR System</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X PicoMaxx Reaction Buffer</td>
<td>Not applicable.</td>
<td></td>
</tr>
</tbody>
</table>

Other EU regulations

**Ozone depleting substances (1005/2009/EU)**
Not listed.

**Prior Informed Consent (PIC) (649/2012/EU)**
Not listed.

**Seveso Directive**
This product is not controlled under the Seveso Directive.

International regulations

**Chemical Weapon Convention List Schedules I, II & III Chemicals**
Not listed.

**Montreal Protocol (Annexes A, B, C, E)**
Not listed.

**Stockholm Convention on Persistent Organic Pollutants**
Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**
Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**
Not listed.

*Inventory list*

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Canada</td>
<td>Not determined.</td>
</tr>
<tr>
<td>China</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Europe</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Japan</td>
<td>Japan inventory (ENCS): Not determined.</td>
</tr>
<tr>
<td></td>
<td>Japan inventory (ISHL): Not determined.</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Not determined.</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Philippines</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Taiwan</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Thailand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Turkey</td>
<td>Not determined.</td>
</tr>
<tr>
<td>United States</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

**15.2 Chemical safety assessment**

This product contains substances for which Chemical Safety Assessments might still be required.

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SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms:
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified.</td>
<td></td>
</tr>
</tbody>
</table>

**Full text of abbreviated H statements**

**PicoMaxx High Fidelity PCR System**
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H411: Toxic to aquatic life with long lasting effects.

**10X PicoMaxx Reaction Buffer**
- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.

**Full text of classifications [CLP/GHS]**

**PicoMaxx High Fidelity PCR System**
- Aquatic Chronic 2, H411: LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
- Eye Dam. 1, H318: SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
- Skin Irrit. 2, H315: SKIN CORROSION/IRRITATION - Category 2

**10X PicoMaxx Reaction Buffer**
- Eye Irrit. 2, H319: SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
- Skin Irrit. 2, H315: SKIN CORROSION/IRRITATION - Category 2
- STOT SE 3, H335: SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

**Notice to reader**

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