SAFETY DATA SHEET
Paq5000 DNA Polymerase (Custom), Part Number 930682

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

1.1 Product identifier
Product name: Paq5000 DNA Polymerase (Custom), Part Number 930682
Part no. (chemical kit): 930682
Part no.: Paq5000 DNA 600680-51
Polymerase
10X Paq5000 DNA 600680-52
Polymerase Buffer

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses: Analytical reagent.

Paq5000 DNA Polymerase 0.2 ml (500 U 5.0 U/µl)
10X Paq5000 DNA Polymerase Buffer 2 x 1 ml

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
Product definition: Paq5000 DNA Mixture
Polymerase
10X Paq5000 DNA Mixture
Polymerase Buffer

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

Ingredients of unknown toxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA Polymerase</td>
<td></td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td></td>
</tr>
</tbody>
</table>

Ingredients of unknown ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td></td>
</tr>
</tbody>
</table>

See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

Date of issue/Date of revision: 23/11/2018

1/16
SECTION 2: Hazards identification

2.2 Label elements

Signal word: Paq5000 DNA Polymerase No signal word.
10X Paq5000 DNA Polymerase Buffer No signal word.

Hazard statements: Paq5000 DNA Polymerase No known significant effects or critical hazards.
10X Paq5000 DNA Polymerase Buffer No known significant effects or critical hazards.

Precautionary statements

Prevention: Paq5000 DNA Polymerase Not applicable.
10X Paq5000 DNA Polymerase Buffer Not applicable.

Response: Paq5000 DNA Polymerase Not applicable.
10X Paq5000 DNA Polymerase Buffer Not applicable.

Storage: Paq5000 DNA Polymerase Not applicable.
10X Paq5000 DNA Polymerase Buffer Not applicable.

Disposal: Paq5000 DNA Polymerase Not applicable.
10X Paq5000 DNA Polymerase Buffer Not applicable.

Hazardous ingredients: 10X Paq5000 DNA Polymerase Buffer Not applicable.

Supplemental label elements: Paq5000 DNA Polymerase Not applicable.
10X Paq5000 DNA Polymerase 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

Special packaging requirements

Tactile warning of danger: Paq5000 DNA Polymerase Not applicable.
10X Paq5000 DNA Polymerase Buffer Not applicable.

2.3 Other hazards

Other hazards which do not result in classification: Paq5000 DNA Polymerase None known.
10X Paq5000 DNA Polymerase 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>10X Paq5000 DNA Polymerase Buffer</td>
<td>EC: 201-064-4 CAS: 77-86-1</td>
<td>≤8.1</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335</td>
<td>[1]</td>
</tr>
<tr>
<td>Trometamol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC: 231-984-1 CAS: 7783-20-2</td>
<td>≤2.5</td>
<td>Aquatic Acute 1, H400 (M=10) Aquatic Chronic 3, H412</td>
<td>[1]</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 : Paq5000 DNA Polymerase

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.

10X Paq5000 DNA Polymerase Buffer

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 : Paq5000 DNA Polymerase

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

10X Paq5000 DNA Polymerase Buffer

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
## SECTION 4: First aid measures

### Skin contact

- **Paq5000 DNA Polymerase**
  - Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

- **10X Paq5000 DNA Polymerase Buffer**
  - Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

### Ingestion

- **Paq5000 DNA Polymerase**
  - 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 Paq5000 DNA Polymerase 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

- **Paq5000 DNA Polymerase**
  - No action shall be taken involving any personal risk or without suitable training.

- **10X Paq5000 DNA Polymerase 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**
  - **Paq5000 DNA Polymerase**
    - No known significant effects or critical hazards.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No known significant effects or critical hazards.

- **Inhalation**
  - **Paq5000 DNA Polymerase**
    - No known significant effects or critical hazards.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No known significant effects or critical hazards.

- **Skin contact**
  - **Paq5000 DNA Polymerase**
    - No known significant effects or critical hazards.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No known significant effects or critical hazards.

- **Ingestion**
  - **Paq5000 DNA Polymerase**
    - No known significant effects or critical hazards.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- **Eye contact**
  - **Paq5000 DNA Polymerase**
    - No specific data.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No specific data.

- **Inhalation**
  - **Paq5000 DNA Polymerase**
    - No specific data.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No specific data.

- **Skin contact**
  - **Paq5000 DNA Polymerase**
    - No specific data.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No specific data.

- **Ingestion**
  - **Paq5000 DNA Polymerase**
    - No specific data.
  - **10X Paq5000 DNA Polymerase Buffer**
    - No specific data.

**Date of issue/Date of revision**: 23/11/2018
SECTION 4: First aid measures

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

<table>
<thead>
<tr>
<th>Substance</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA</td>
<td>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase</td>
<td>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.</td>
</tr>
</tbody>
</table>

Specific treatments

<table>
<thead>
<tr>
<th>Substance</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA</td>
<td>No specific treatment.</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase</td>
<td>No specific treatment.</td>
</tr>
</tbody>
</table>

SECTION 5: Firefighting measures

5.1 Extinguishing media

<table>
<thead>
<tr>
<th>Substance</th>
<th>Extinguishing Agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
</tbody>
</table>

5.2 Special hazards arising from the substance or mixture

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>Decomposition Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA</td>
<td>carbon dioxide, carbon monoxide</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase</td>
<td>carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, metal oxide/oxides</td>
</tr>
</tbody>
</table>

5.3 Advice for firefighters

<table>
<thead>
<tr>
<th>Substance</th>
<th>Precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA</td>
<td>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.</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase</td>
<td>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.</td>
</tr>
</tbody>
</table>

Special protective equipment for fire-fighters

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paq5000 DNA</td>
<td>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.</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase</td>
<td>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.</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 23/11/2018
SECTION 5: Firefighting measures

basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- Paq5000 DNA Polymerase: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering.
- 10X Paq5000 DNA Polymerase Buffer: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering.

For emergency responders:
- Paq5000 DNA Polymerase: 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 Paq5000 DNA Polymerase 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:
- Paq5000 DNA Polymerase: Avoid dispersal of spilt 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 Paq5000 DNA Polymerase Buffer: Avoid dispersal of spilt 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:
- Paq5000 DNA Polymerase: 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 Paq5000 DNA Polymerase 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:
- Paq5000 DNA Polymerase: Put on appropriate personal protective equipment (see Section 8).
- 10X Paq5000 DNA Polymerase Buffer: Put on appropriate personal protective equipment (see Section 8).
Paq5000 DNA Polymerase (Custom), Part Number 930682

SECTION 7: Handling and storage

Advice on general occupational hygiene

Paq5000 DNA Polymerase
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 Paq5000 DNA Polymerase Buffer
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.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Paq5000 DNA Polymerase
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 Paq5000 DNA Polymerase 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

Paq5000 DNA Polymerase
Industrial applications, Professional applications.

10X Paq5000 DNA Polymerase Buffer
Industrial applications, Professional applications.

Industrial sector specific solutions

Paq5000 DNA Polymerase
Not applicable.

10X Paq5000 DNA Polymerase 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>Paq5000 DNA Polymerase</td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011).</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hours. Form: Mist</td>
</tr>
</tbody>
</table>

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SECTION 8: Exposure controls/personal protection

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.

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.

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Paq5000 DNA Polymerase (Custom), Part Number 930682

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Paq5000 DNA Polymerase</th>
<th>10X Paq5000 DNA Polymerase Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Liquid.</td>
<td>Liquid.</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid.</td>
<td>Liquid.</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not available.</td>
<td>10</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Paq5000 DNA Polymerase</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility(ies)</td>
<td>Paq5000 DNA Polymerase</td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Paq5000 DNA Polymerase</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Paq5000 DNA Polymerase</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Paq5000 DNA Polymerase</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Paq5000 DNA Polymerase</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Paq5000 DNA Polymerase</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Not available.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Paq5000 DNA Polymerase</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 9.2 Other information

No additional information.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

<table>
<thead>
<tr>
<th>Paq5000 DNA Polymerase</th>
<th>No specific test data related to reactivity available for this product or its ingredients.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
</tbody>
</table>

#### 10.2 Chemical stability

<table>
<thead>
<tr>
<th>Paq5000 DNA Polymerase</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

#### 10.3 Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>Paq5000 DNA Polymerase</th>
<th>Under normal conditions of storage and use, hazardous reactions will not occur.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
</tbody>
</table>

#### 10.4 Conditions to avoid

<table>
<thead>
<tr>
<th>Paq5000 DNA Polymerase</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.5 Incompatible materials
- Paq5000 DNA Polymerase
- 10X Paq5000 DNA Polymerase Buffer

May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products
- Paq5000 DNA Polymerase
- 10X Paq5000 DNA Polymerase Buffer

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

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>10X Paq5000 DNA Polymerase Buffer</td>
<td>Trometamol LD50 Dermal</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Trometamol LD50 Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Ammonium sulphate LD50 Oral</td>
<td>Rat</td>
<td>2840 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>10X Paq5000 DNA Polymerase Buffer</td>
<td>Trometamol Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>25 Percent 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Trometamol Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitiser
Conclusion/Summary: Not available.

Mutagenicity
Conclusion/Summary: Not available.

Carcinogenicity
Conclusion/Summary: Not available.

Reproductive toxicity
Conclusion/Summary: Not available.

Teratogenicity
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 Paq5000 DNA Polymerase Buffer Trometamol</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>1-Propanaminium, 2-hydroxy-n,n-dimethyl-3-sulfo-n-3-(3.alpha.,5.beta.,7.alpha.,12.alpha.)-3,7,12-trihydroxy-24-oxocholan-24-ylaminopropyl-, inner salt</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

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Not available.

Information on likely routes of exposure

Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Ingestion
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Skin contact
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Eye contact
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No specific data.

Ingestion
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No specific data.

Skin contact
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No specific data.

Eye contact
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
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
Paq5000 DNA Polymerase
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

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Carcinogenicity: Paq5000 DNA Polymerase
No known significant effects or critical hazards.
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Mutagenicity: Paq5000 DNA Polymerase
No known significant effects or critical hazards.
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Teratogenicity: Paq5000 DNA Polymerase
No known significant effects or critical hazards.
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Developmental effects: Paq5000 DNA Polymerase
No known significant effects or critical hazards.
10X Paq5000 DNA Polymerase Buffer
No known significant effects or critical hazards.

Fertility effects: Paq5000 DNA Polymerase
No known significant effects or critical hazards.
10X Paq5000 DNA Polymerase 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>10X Paq5000 DNA Polymerase Buffer</td>
<td>Acute EC50 &gt;980 mg/l Fresh water</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
<tr>
<td>Trometamol</td>
<td>Acute NOEC 520 mg/l Fresh water</td>
<td>Daphnia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2.6 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Young</td>
<td>48 hours</td>
</tr>
<tr>
<td>Ammonium sulphate</td>
<td>Acute LC50 14000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Young</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 68 µg/l Fresh water</td>
<td>Fish - Oncorhynchus gorbuscha - Alevin</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 7.5 mg/l Marine water</td>
<td>Algae - Phaeodactylum tricornutum - Exponential growth phase</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 143 µg/l Marine water</td>
<td>Fish - Salmo salar - Post-smolt</td>
<td>5 weeks</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
Not available.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Ammonium sulphate</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Paq5000 DNA Polymerase Buffer</td>
<td>Trometamol</td>
<td>-1.56</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ammonium sulphate</td>
<td>-5.1</td>
<td>-</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

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SECTION 12: Ecological information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil/water partition coefficient ($K_{OC}$)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Mobility</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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 spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

**ADR/RID / IMDG / IATA**: Not regulated.

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**: None of the components are listed.

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**SECTION 15: Regulatory information**

| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | Paq5000 DNA Polymerase | Not applicable. | 10X Paq5000 DNA Polymerase Buffer | Not applicable. |

**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**

- **Australia**: Not determined.
- **Canada**: Not determined.
- **China**: Not determined.
- **Europe**: Not determined.
- **Japan**: Not determined.  
  - Japan inventory (ENCS): Not determined.  
  - Japan inventory (ISHL): Not determined.
- **Malaysia**: Not determined.
- **New Zealand**: Not determined.
- **Philippines**: Not determined.
- **Republic of Korea**: Not determined.
- **Taiwan**: All components are listed or exempted.
- **Thailand**: Not determined.
- **Turkey**: Not determined.
- **United States**: Not determined.
- **Viet Nam**: Not determined.

**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

10X Paq5000 DNA Polymerase Buffer

- H315: Causes skin irritation.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.
- H400: Very toxic to aquatic life.
- H412: Harmful to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

10X Paq5000 DNA Polymerase Buffer

- Aquatic Acute 1, H400: SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
- Aquatic Chronic 3, H412: LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
- 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

Date of issue/ Date of revision: 23/11/2018
Date of previous issue: 06/11/2016
Version: 2

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