SAFETY DATA SHEET

Easy-A High-Fidelity PCR Cloning Enzyme, Part Number 600402

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

1.1 Product identifier

Product name: Easy-A High-Fidelity PCR Cloning Enzyme, Part Number 600402
Part No. (Kit): 600402
Part No. (Kit):
- Easy-A Hi-Fi PCR Cloning Enzyme
- 10X Easy-A Reaction Buffer

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

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical reagent.</td>
</tr>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
</tr>
<tr>
<td>100 µl (500 U 5 U/µl)</td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
</tr>
<tr>
<td>2 ml (2 x 1 ml)</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

Product definition:
- Easy-A Hi-Fi PCR Cloning Enzyme: Mixture
- 10X Easy-A Reaction Buffer: Mixture

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

<table>
<thead>
<tr>
<th>10X Easy-A Reaction Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315 SKIN CORROSION/IRRITATION - Category 2</td>
</tr>
<tr>
<td>H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2</td>
</tr>
</tbody>
</table>

Ingredients of unknown toxicity:
- Easy-A Hi-Fi PCR Cloning Enzyme: Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
- 10X Easy-A Reaction Buffer: Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 10 - 30%

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1/17
# SECTION 2: Hazards identification

### Ingredients of unknown ecotoxicity

- **10X Easy-A Reaction Buffer**

**Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment:** 11%

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.

### 2.2 Label elements

#### Hazard pictograms

- **10X Easy-A Reaction Buffer**

#### Signal word

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

#### Hazard statements

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

**No known significant effects or critical hazards.**

**H319** - Causes serious eye irritation.

**H315** - Causes skin irritation.

#### Precautionary statements

**Prevention**

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

**Not applicable.**

**P280** - Wear protective gloves. Wear eye or face protection.

**P264** - Wash hands thoroughly after handling.

**Response**

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

**Not applicable.**

**P305 + P351 + P338** - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage**

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

**Not applicable.**

**Disposal**

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

**Not applicable.**

**Hazardous ingredients**

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

**Not applicable.**

**Supplemental label elements**

- **Easy-A Hi-Fi PCR Cloning Enzyme**

- **10X Easy-A Reaction Buffer**

**Not applicable.**

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

**Not applicable.**

**Special packaging requirements**

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**Date of issue/Date of revision:** 29/06/2017

Easy-A High-Fidelity PCR Cloning Enzyme, Part Number 600402

SECTION 2: Hazards identification

2.3 Other hazards

Other hazards which do not result in classification

Easy-A Hi-Fi PCR Cloning Enzyme

None known.

10X Easy-A 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>CAS: 9036-19-5</td>
<td>&lt;1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[ (1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>EC: 214-684-5 CAS: 1185-53-1</td>
<td>≥10 - &lt;20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride</td>
<td></td>
<td></td>
<td>See Section 16 for the full text of the H statements declared above.</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

Easy-A Hi-Fi PCR Cloning Enzyme

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 Easy-A Reaction Buffer

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

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## SECTION 4: First aid measures

### Inhalation
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- **10X Easy-A Reaction Buffer**
  - Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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.

### Skin contact
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **10X Easy-A Reaction Buffer**
  - Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

### Ingestion
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - 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 Easy-A Reaction Buffer**
  - Wash out mouth with water. Remove dentures if any. 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. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Protection of first-aiders
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No action shall be taken involving any personal risk or without suitable training.
- **10X Easy-A Reaction Buffer**
  - No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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

#### Potential acute health effects
- **Eye contact**
  - **Easy-A Hi-Fi PCR Cloning Enzyme**
    - No known significant effects or critical hazards.
  - **10X Easy-A Reaction Buffer**
    - Causes serious eye irritation.

- **Inhalation**
  - **Easy-A Hi-Fi PCR Cloning Enzyme**
    - No known significant effects or critical hazards.
  - **10X Easy-A Reaction Buffer**
    - No known significant effects or critical hazards.
### SECTION 4: First aid measures

#### Skin contact
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - 10X Easy-A Reaction Buffer
  - No known significant effects or critical hazards.
  - Causes skin irritation.

#### Ingestion
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

##### Eye contact
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - Adverse symptoms may include the following:
  - Pain or irritation
  - Watering
  - Redness

##### Inhalation
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - No specific data.

##### Skin contact
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - Adverse symptoms may include the following:
  - Irritation
  - Redness

##### Ingestion
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - No specific data.

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

##### Notes to physician
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A 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
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - No specific treatment.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - Use an extinguishing agent suitable for the surrounding fire.

##### Unsuitable extinguishing media
- **Easy-A Hi-Fi PCR Cloning Enzyme**
- 10X Easy-A Reaction Buffer
  - None known.

#### 5.2 Special hazards arising from the substance or mixture
SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Hazards from the substance or mixture</th>
<th>Easy-A Hi-Fi PCR Cloning Enzyme</th>
<th>In a fire or if heated, a pressure increase will occur and the container may burst.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>Hazardous combustion products</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>Decomposition products may include the following materials:</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>carbon dioxide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>carbon monoxide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decomposition products may include the following materials:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>carbon dioxide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>carbon monoxide</td>
</tr>
<tr>
<td></td>
<td></td>
<td>nitrogen oxides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>halogenated compounds</td>
</tr>
</tbody>
</table>

5.3 Advice for firefighters

Special precautions for fire-fighters:

- Easy-A Hi-Fi PCR Cloning Enzyme
- 10X Easy-A 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:

- Easy-A Hi-Fi PCR Cloning Enzyme
- 10X Easy-A 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

- Easy-A Hi-Fi PCR Cloning Enzyme
- 10X Easy-A 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 spilt material. Put on appropriate personal protective equipment.

For emergency responders:

- Easy-A Hi-Fi PCR Cloning Enzyme
- 10X Easy-A 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".

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Easy-A High-Fidelity PCR Cloning Enzyme, Part Number 600402

SECTION 6: Accidental release measures

6.2 Environmental precautions

<table>
<thead>
<tr>
<th>Substance</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>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).</td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td>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).</td>
</tr>
</tbody>
</table>

6.3 Methods and material for containment and cleaning up

Methods for cleaning up

<table>
<thead>
<tr>
<th>Substance</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>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.</td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td>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.</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>Precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>Put on appropriate personal protective equipment (see Section 8).</td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td>Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.</td>
</tr>
</tbody>
</table>

Advice on general occupational hygiene

<table>
<thead>
<tr>
<th>Substance</th>
<th>Precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>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.</td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td>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.</td>
</tr>
</tbody>
</table>

7.2 Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Storage</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>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.</td>
</tr>
</tbody>
</table>

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SECTION 7: Handling and storage

10X Easy-A Reaction Buffer

before handling or use. 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:

Industrial sector specific solutions:

Industrial applications, Professional applications.

10X Easy-A Reaction Buffer

Industrial applications, Professional applications.

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>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011).</td>
</tr>
<tr>
<td>Glycerol</td>
<td>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.

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
SECTION 8: Exposure controls/personal protection

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: chemical splash goggles.

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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: Easy-A Hi-Fi PCR Cloning Enzyme Liquid.
10X Easy-A Reaction Buffer Liquid.

Colour: Easy-A Hi-Fi PCR Cloning Enzyme Not available.
10X Easy-A Reaction Buffer Not available.

Odour: Easy-A Hi-Fi PCR Cloning Enzyme Not available.
10X Easy-A Reaction Buffer Not available.

Odour threshold: Easy-A Hi-Fi PCR Cloning Enzyme Not available.
10X Easy-A Reaction Buffer Not available.

pH: Easy-A Hi-Fi PCR Cloning Enzyme 8
10X Easy-A Reaction Buffer 8.5
## SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Easy-A Hi-Fi PCR Cloning Enzyme</th>
<th>10X Easy-A Reaction Buffer</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/freezing point</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Usually easily soluble in the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>following materials: cold water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and hot water.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


**SECTION 9: Physical and chemical properties**

<table>
<thead>
<tr>
<th>Explosive properties</th>
<th>Easy-A Hi-Fi PCR Cloning Enzyme</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oxidising properties</th>
<th>Easy-A Hi-Fi PCR Cloning Enzyme</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

9.2 Other information
No additional information.

**SECTION 10: Stability and reactivity**

10.1 Reactivity

| Easy-A Hi-Fi PCR Cloning Enzyme | No specific test data related to reactivity available for this product or its ingredients. |
| 10X Easy-A Reaction Buffer      | No specific test data related to reactivity available for this product or its ingredients. |

10.2 Chemical stability

| Easy-A Hi-Fi PCR Cloning Enzyme | The product is stable. |
| 10X Easy-A Reaction Buffer      | The product is stable. |

10.3 Possibility of hazardous reactions

| Easy-A Hi-Fi PCR Cloning Enzyme | Under normal conditions of storage and use, hazardous reactions will not occur. |
| 10X Easy-A Reaction Buffer      | Under normal conditions of storage and use, hazardous reactions will not occur. |

10.4 Conditions to avoid

| Easy-A Hi-Fi PCR Cloning Enzyme | No specific data. |
| 10X Easy-A Reaction Buffer      | No specific data. |

10.5 Incompatible materials

| Easy-A Hi-Fi PCR Cloning Enzyme | May react or be incompatible with oxidising materials. |
| 10X Easy-A Reaction Buffer      | May react or be incompatible with oxidising materials. |

10.6 Hazardous decomposition products

| Easy-A Hi-Fi PCR Cloning Enzyme | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| 10X Easy-A Reaction 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>Easy-A Hi-Fi PCR Cloning Enzyme Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2800 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Acute toxicity estimates**
Not available.

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SECTION 11: Toxicological information

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>Easy-A Hi-Fi PCR Cloning Enzyme Poly(oxy-1,2-ethanediyl), alpha-[[1,1,3, 3-tetramethylbutyl]phenyl]-omega-hydroxy-</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1%</td>
<td>-</td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td>Causing skin irritation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
<td></td>
<td></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 Easy-A Reaction Buffer</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Routes of entry anticipated: Oral, Dermal, Inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td></td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td></td>
</tr>
</tbody>
</table>

Potential acute health effects

Inhalation : Easy-A Hi-Fi PCR Cloning Enzyme 10X Easy-A Reaction Buffer No known significant effects or critical hazards. 10X Easy-A Reaction Buffer No known significant effects or critical hazards.

Ingestion : Easy-A Hi-Fi PCR Cloning Enzyme 10X Easy-A Reaction Buffer No known significant effects or critical hazards. 10X Easy-A Reaction Buffer No known significant effects or critical hazards.

Skin contact : Easy-A Hi-Fi PCR Cloning Enzyme 10X Easy-A Reaction Buffer No known significant effects or critical hazards. Causes skin irritation.

Eye contact : Easy-A Hi-Fi PCR Cloning Enzyme 10X Easy-A Reaction Buffer No known significant effects or critical hazards. Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : Easy-A Hi-Fi PCR Cloning Enzyme 10X Easy-A Reaction Buffer No specific data. 10X Easy-A Reaction Buffer No specific data.

Ingestion : Easy-A Hi-Fi PCR Cloning Enzyme 10X Easy-A Reaction Buffer No specific data. 10X Easy-A Reaction Buffer No specific data.

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### Toxicological information

#### Skin contact
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No specific data.
- **10X Easy-A Reaction Buffer**
  - Adverse symptoms may include the following:
    - irritation
    - redness

#### Eye contact
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No specific data.
- **10X Easy-A Reaction Buffer**
  - Adverse symptoms may include the following:
    - pain or irritation
    - watering
    - redness

#### 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**
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No known significant effects or critical hazards.
- **10X Easy-A Reaction Buffer**
  - No known significant effects or critical hazards.

**Carcinogenicity**
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No known significant effects or critical hazards.
- **10X Easy-A Reaction Buffer**
  - No known significant effects or critical hazards.

**Mutagenicity**
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No known significant effects or critical hazards.
- **10X Easy-A Reaction Buffer**
  - No known significant effects or critical hazards.

**Teratogenicity**
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No known significant effects or critical hazards.
- **10X Easy-A Reaction Buffer**
  - No known significant effects or critical hazards.

**Developmental effects**
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No known significant effects or critical hazards.
- **10X Easy-A Reaction Buffer**
  - No known significant effects or critical hazards.

**Fertility effects**
- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - No known significant effects or critical hazards.
- **10X Easy-A Reaction Buffer**
  - No known significant effects or critical hazards.

**Easy-A High-Fidelity PCR Cloning Enzyme, Part Number 600402**

**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>Easy-A Hi-Fi PCR Cloning Enzyme Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>Acute EC50 210 μg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></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>

### 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>Easy-A Hi-Fi PCR Cloning Enzyme Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>3.77</td>
<td>78.67</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.

### 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**
  - **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.

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SECTION 13: Disposal considerations

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. 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

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

<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>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>Substance of equivalent concern for environment</td>
<td>Recommended</td>
<td>ED/169/2012</td>
<td>2/10/2014</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>
</tbody>
</table>

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

: Easy-A Hi-Fi PCR Cloning Enzyme: Not applicable.
: 10X Easy-A Reaction 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.

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SECTION 15: Regulatory information

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

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list

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

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

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><strong>10X Easy-A Reaction Buffer</strong></td>
<td></td>
</tr>
<tr>
<td>Skin Irrit. 2, H315</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Irrit. 2, H319</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements

- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - H315: Causes skin irritation.
  - H318: Causes serious eye damage.
  - H411: Toxic to aquatic life with long lasting effects.

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

Full text of classifications [CLP/GHS]

Date of issue/Date of revision: 29/06/2017
Date of issue/ Date of revision: 29/06/2017
Date of previous issue: No previous validation.
Version: 1

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