Section 1. Identification

1.1 Product identifier

Product name : Easy-A High-Fidelity PCR Cloning Enzyme, Part Number 600402
Part No. (Chemical Kit) : 600402
Part No. : Easy-A Hi-Fi PCR Cloning Enzyme 600402-51
10X Easy-A Reaction Buffer 600400-52
Validation date : 6/29/2017

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

Material uses : Analytical reagent.
Easy-A Hi-Fi PCR Cloning Enzyme 100 µl (500 U 5 U/µl)
10X Easy-A Reaction Buffer 2 ml (2 x 1 ml)

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : Easy-A Hi-Fi PCR Cloning Enzyme
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
10X Easy-A Reaction Buffer
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Easy-A Hi-Fi PCR Cloning Enzyme
H320 EYE IRRITATION - Category 2B

10X Easy-A Reaction Buffer
H315 SKIN IRRITATION - Category 2
H319 EYE IRRITATION - Category 2A

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%
Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 10 - 30%

2.2 GHS label elements

Date of issue : 06/29/2017
Section 2. Hazards identification

Hazard pictograms: 10X Easy-A Reaction Buffer

Signal word:
- Easy-A Hi-Fi PCR Cloning Enzyme: Warning
- 10X Easy-A Reaction Buffer: Warning

Hazard statements:
- Easy-A Hi-Fi PCR Cloning Enzyme: H320 - Causes eye irritation.
- 10X Easy-A Reaction Buffer: H319 - Causes serious eye irritation.
  H315 - Causes skin irritation.

Precautionary statements
Prevention:
- Easy-A Hi-Fi PCR Cloning Enzyme: P264 - Wash hands thoroughly after handling.
- 10X Easy-A Reaction Buffer: P280 - Wear protective gloves. Wear eye or face protection.
  P264 - Wash hands thoroughly after handling.

Response:
- Easy-A Hi-Fi PCR Cloning Enzyme: P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P337 + P313 - If eye irritation persists: Get medical attention.
- 10X Easy-A Reaction Buffer: P302 + P352 + P362 + P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.
  P332 + P313 - If skin irritation occurs: Get medical attention.
  P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P337 + P313 - If eye irritation persists: Get medical attention.

Storage: Not applicable.

Disposal: Not applicable.

Supplemental label elements:
- None known.

2.3 Other hazards
- Hazards not otherwise classified:
  - Easy-A Hi-Fi PCR Cloning Enzyme: None known.
  - 10X Easy-A Reaction Buffer: None known.

Section 3. Composition/information on ingredients

Substance/mixture:
- Easy-A Hi-Fi PCR Cloning Enzyme: Mixture
- 10X Easy-A Reaction Buffer: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>≥50 - ≤75</td>
<td>56-81-5</td>
</tr>
<tr>
<td>10X Easy-A Reaction Buffer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>≥10 - &lt;20</td>
<td>1185-53-1</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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### Section 3. Composition/information on ingredients

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.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### 4.1 Description of necessary first aid measures

<table>
<thead>
<tr>
<th>Condition</th>
<th>Product</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>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. If irritation persists, get medical attention.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>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.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>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.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>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.</td>
</tr>
</tbody>
</table>

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Section 4. First aid measures

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

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.

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.

**4.2 Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

**Eye contact**: Easy-A Hi-Fi PCR Cloning Enzyme

Causes eye irritation.

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.

**Skin contact**: Easy-A Hi-Fi PCR Cloning Enzyme

No known significant effects or critical hazards.

10X Easy-A Reaction Buffer

Causes skin irritation.

**Ingestion**: 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.

**Over-exposure signs/symptoms**

**Eye contact**: Easy-A Hi-Fi PCR Cloning Enzyme

Adverse symptoms may include the following:

irritation

watering

redness

10X Easy-A Reaction Buffer

Adverse symptoms may include the following:

pain or irritation

watering

redness

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

No specific data.

10X Easy-A Reaction Buffer

No specific data.

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Section 4. First aid measures

Skin contact: Easy-A Hi-Fi PCR Cloning Enzyme
10X Easy-A Reaction Buffer
No specific data.
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 immediate medical attention and special treatment needed, if necessary

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.

Protection of first-aiders: 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Adverse symptoms may include the following:
irritation
redness

See toxicological information (Section 11)

Section 5. Fire-fighting 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

Specific hazards arising from the chemical: Easy-A Hi-Fi PCR Cloning Enzyme
10X Easy-A Reaction Buffer
In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products: Easy-A Hi-Fi PCR Cloning Enzyme
10X Easy-A Reaction Buffer
Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds

5.3 Advice for firefighters
### Section 5. Fire-fighting measures

**Special protective actions for fire-fighters:**

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

  - **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:** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

  - **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.

### 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:** 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

  - **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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders:**

- **Easy-A Hi-Fi PCR Cloning Enzyme:** If specialized 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 Easy-A Reaction Buffer:** If specialized 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

- **Easy-A Hi-Fi PCR Cloning Enzyme:** Avoid dispersal of spilled 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 Easy-A Reaction Buffer:** Avoid dispersal of spilled 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).
Section 6. Accidental release measures

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up:

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

Section 7. Handling and storage

7.1 Precautions for safe handling

**Protective measures**:

- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor 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.

- **10X Easy-A Reaction Buffer**
  - Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor 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.

**Advice on general occupational hygiene**:

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

- **Easy-A Hi-Fi PCR Cloning Enzyme**
  - 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for
Section 7. Handling and storage

10X Easy-A Reaction Buffer

incompatible materials 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 unlabeled 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:

Easy-A Hi-Fi PCR Cloning Enzyme
Industrial applications, Professional applications.

10X Easy-A Reaction Buffer
Industrial applications, Professional applications.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Ingredient name | Exposure limits
--- | ---
Easy-A Hi-Fi PCR Cloning Enzyme | OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
Glycerol | OSHA PEL (United States, 6/2016). TWA: 10 mg/m³ 8 hours. Form: Total dust

10X Easy-A Reaction Buffer

2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride | None.

8.2 Exposure controls

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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.

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.
Section 8. Exposure controls/personal protection

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.

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.

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

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

Odor 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

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

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

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

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

Flammability (solid, gas): Easy-A Hi-Fi PCR Cloning Enzyme Not applicable.
10X Easy-A Reaction Buffer Not applicable.

Lower and upper explosive (flammable) limits: Easy-A Hi-Fi PCR Cloning Enzyme Not available.
10X Easy-A Reaction Buffer Not available.

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

Vapor density: Easy-A Hi-Fi PCR Cloning Enzyme Not available.
10X Easy-A Reaction Buffer Not available.
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>
</tr>
</thead>
<tbody>
<tr>
<td>Relative density</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<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>
</tbody>
</table>

Section 10. Stability and reactivity

10.1 Reactivity: The product is stable.

10.2 Chemical stability: The product is stable.

10.3 Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid: No specific data.

10.5 Incompatible materials: May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products: 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</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

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Section 11. Toxicological information

<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 Glycerol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sensitization**
Not available.

**Mutagenicity**
Not available.

**Carcinogenicity**
Not available.

**Reproductive toxicity**
Not available.

**Teratogenicity**
Not available.

**Specific target organ toxicity (single exposure)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Easy-A Reaction Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</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.

**Information on the likely routes of exposure**

| : Easy-A Hi-Fi PCR Cloning Enzyme 10X Easy-A Reaction Buffer | Causes eye irritation. Causes serious eye irritation. |

**Potential acute health effects**

**Eye contact**

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

**Inhalation**

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

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

**Date of issue :** 06/29/2017
## Section 11. Toxicological information

<table>
<thead>
<tr>
<th><strong>Eye contact</strong></th>
<th>Easy-A Hi-Fi PCR Cloning Enzyme</th>
<th>Adverse symptoms may include the following: irritation, watering, redness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No specific data.</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>Adverse symptoms may include the following: irritation, redness</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

<table>
<thead>
<tr>
<th>Potential immediate effects</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### Long term exposure

<table>
<thead>
<tr>
<th>Potential immediate effects</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### Potential chronic health effects

<table>
<thead>
<tr>
<th>General</th>
<th>Easy-A Hi-Fi PCR Cloning Enzyme</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Teratogenicity</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Developmental effects</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Fertility effects</td>
<td>Easy-A Hi-Fi PCR Cloning Enzyme</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>10X Easy-A Reaction Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.
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</td>
<td>Acute LC50 54000 mg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td>Glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</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</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods:

The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Date of issue: 06/29/2017
Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

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.

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

U.S. Federal regulations :
- Clean Water Act (CWA) 311: Edetic acid
- Clean Air Act  Section 112(b) Hazardous Air Pollutants (HAPs): Not listed
- Clean Air Act Section 602 Class I Substances: Not listed
- Clean Air Act Section 602 Class II Substances: Not listed
- DEA List I Chemicals (Precursor Chemicals): Not listed
- DEA List II Chemicals (Essential Chemicals): Not listed

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

TSCA 8(a) PAIR: Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-
TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 311: Edetic acid

SARA 302/304

Composition/information on ingredients
No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Easy-A Hi-Fi PCR Cloning Enzyme  Immediate (acute) health hazard
10X Easy-A Reaction Buffer  Immediate (acute) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerol</td>
<td></td>
<td></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></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

State regulations

Date of issue : 06/29/2017
Section 15. Regulatory information

Massachusetts: The following components are listed: GLYCERINE MIST
New York: None of the components are listed.
New Jersey: The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL
Pennsylvania: The following components are listed: 1,2,3-PROPANETRIOL

California Prop. 65
Not available.

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: 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.

Section 16. Other information

History

Date of issue: 06/29/2017
Date of previous issue: 01/30/2015
Version: 4

Notice to reader

Disclaimer: The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

Date of issue: 06/29/2017