SAFETY DATA SHEET

HotStart-IT® FideliTaq™ DNA Polymerase

Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>HotStart-IT® FideliTaq™ DNA Polymerase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>71155</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
<tr>
<td>Supplier/Manufacturer</td>
<td>3420 Central Expressway, Santa Clara CA 95051</td>
</tr>
<tr>
<td>In case of emergency</td>
<td>Chemtrec: 1 800 424 9300 Outside USA &amp; Canada: +1 703 527 3887</td>
</tr>
</tbody>
</table>

Section 2. Hazards identification

| OSHA/HCS status            | HotStart-IT® FideliTaq™ DNA Polymerase  
|                            | 10X PCR Reaction Buffer with MgCl2  
|                            | Magnesium Chloride, 25 mM Solution  
| Classification of the substance or mixture | HotStart-IT® FideliTaq™ DNA Polymerase  
|                            | 10X PCR Reaction Buffer with MgCl2  
|                            | Magnesium Chloride, 25 mM Solution  
|                            | This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.  
|                            | No classified.  
|                            | No classified.  
| GHS label elements         | HotStart-IT® FideliTaq™ DNA Polymerase  
|                            | 10X PCR Reaction Buffer with MgCl2  
|                            | Magnesium Chloride, 25 mM Solution  
| Signal word                | Warning  
|                            | No signal word.  
| Hazard statements          | Causes eye irritation.  
|                            | No known significant effects or critical hazards.  
| Precautionary statements   | HotStart-IT® FideliTaq™ DNA Polymerase  
|                            | 10X PCR Reaction Buffer with MgCl2  
|                            | Magnesium Chloride, 25 mM Solution  
| General                    | Not applicable.  
|                            | Not applicable.  
|                            | Not applicable.  

Section 2. Hazards identification

**Prevention**

- **HotStart-IT® FideliTaq™ DNA Polymerase**
  - Wear eye or face protection. Wash hands thoroughly after handling. Not applicable.
- **10X PCR Reaction Buffer with MgCl2**
  - Not applicable.
- **Magnesium Chloride, 25 mM Solution**
  - Not applicable.

**Response**

- **HotStart-IT® FideliTaq™ DNA Polymerase**
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- **10X PCR Reaction Buffer with MgCl2**
  - Not applicable.
- **Magnesium Chloride, 25 mM Solution**
  - Not applicable.

**Storage**

- **HotStart-IT® FideliTaq™ DNA Polymerase**
  - Not applicable.
- **10X PCR Reaction Buffer with MgCl2**
  - Not applicable.
- **Magnesium Chloride, 25 mM Solution**
  - Not applicable.

**Disposal**

- **HotStart-IT® FideliTaq™ DNA Polymerase**
  - Not applicable.
- **10X PCR Reaction Buffer with MgCl2**
  - Not applicable.
- **Magnesium Chloride, 25 mM Solution**
  - Not applicable.

**Supplemental label elements**

- **HotStart-IT® FideliTaq™ DNA Polymerase**
  - None known.
- **10X PCR Reaction Buffer with MgCl2**
  - None known.
- **Magnesium Chloride, 25 mM Solution**
  - None known.

**Hazards not otherwise classified**

- **HotStart-IT® FideliTaq™ DNA Polymerase**
  - None known.
- **10X PCR Reaction Buffer with MgCl2**
  - None known.
- **Magnesium Chloride, 25 mM Solution**
  - None known.

Section 3. Composition/information on ingredients

**Substance/mixture**

- Mixture

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<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
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<td>glycerol</td>
<td>25 - 50</td>
<td>56-81-5</td>
</tr>
<tr>
<td>potassium chloride</td>
<td>1 - 10</td>
<td>7447-40-7</td>
</tr>
<tr>
<td><strong>10X PCR Reaction Buffer with MgCl2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium chloride</td>
<td>1 - 10</td>
<td>7447-40-7</td>
</tr>
<tr>
<td>2-amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>1 - 10</td>
<td>1185-53-1</td>
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</table>

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

**Substance/mixture**

- Mixture

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<thead>
<tr>
<th>Ingredient name</th>
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<th>CAS number</th>
</tr>
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<td>1 - 10</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.

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

Description of necessary first aid measures

**Eye contact**
- **HotStart-IT® FideliTaq™ DNA Polymerase**: 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.
- **10X PCR Reaction Buffer with MgCl2**: 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.
- **Magnesium Chloride, 25 mM Solution**: 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**
- **HotStart-IT® FideliTaq™ DNA Polymerase**: 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.
- **10X PCR Reaction Buffer with MgCl2**: 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.
- **Magnesium Chloride, 25 mM Solution**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

**Skin contact**
- **HotStart-IT® FideliTaq™ DNA Polymerase**: 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.
- **10X PCR Reaction Buffer with MgCl2**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **Magnesium Chloride, 25 mM Solution**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion**
- **HotStart-IT® FideliTaq™ DNA Polymerase**: 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.
**Section 4. First aid measures**

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 PCR Reaction Buffer with MgCl₂  
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.  

Magnesium Chloride, 25 mM Solution  
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.

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

**Potential acute health effects**

- **Eye contact**: HotStart-IT® FideliTaq™ DNA Polymerase  
  Causes eye irritation.  
  10X PCR Reaction Buffer with MgCl₂  
  No known significant effects or critical hazards.  
  Magnesium Chloride, 25 mM Solution  
  No known significant effects or critical hazards.

- **Inhalation**: HotStart-IT® FideliTaq™ DNA Polymerase  
  No known significant effects or critical hazards.  
  10X PCR Reaction Buffer with MgCl₂  
  Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.  
  Magnesium Chloride, 25 mM Solution  
  No known significant effects or critical hazards.

- **Skin contact**: HotStart-IT® FideliTaq™ DNA Polymerase  
  No known significant effects or critical hazards.  
  10X PCR Reaction Buffer with MgCl₂  
  No known significant effects or critical hazards.  
  Magnesium Chloride, 25 mM Solution  
  No known significant effects or critical hazards.

- **Ingestion**: HotStart-IT® FideliTaq™ DNA Polymerase  
  May be irritating to mouth, throat and stomach.  
  10X PCR Reaction Buffer with MgCl₂  
  No known significant effects or critical hazards.  
  Magnesium Chloride, 25 mM Solution  
  No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

- **Eye contact**: HotStart-IT® FideliTaq™ DNA Polymerase  
  Adverse symptoms may include the following: irritation, watering, redness  
  10X PCR Reaction Buffer with MgCl₂  
  No specific data.  
  Magnesium Chloride, 25 mM Solution  
  No specific data.
Section 4. First aid measures

### Inhalation
- HotStart-IT® FideliTaq™ DNA Polymerase
- 10X PCR Reaction Buffer with MgCl2
- Magnesium Chloride, 25 mM Solution
  - No specific data.

### Skin contact
- HotStart-IT® FideliTaq™ DNA Polymerase
- 10X PCR Reaction Buffer with MgCl2
- Magnesium Chloride, 25 mM Solution
  - No specific data.

### Ingestion
- HotStart-IT® FideliTaq™ DNA Polymerase
- 10X PCR Reaction Buffer with MgCl2
- Magnesium Chloride, 25 mM Solution
  - No specific data.

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician:** Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments:** No specific treatment.

**Protection of first-aiders:** No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**
- HotStart-IT® FideliTaq™ DNA Polymerase
- 10X PCR Reaction Buffer with MgCl2
- Magnesium Chloride, 25 mM Solution
  - Use an extinguishing agent suitable for the surrounding fire.
  - Use an extinguishing agent suitable for the surrounding fire.
  - Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**
- HotStart-IT® FideliTaq™ DNA Polymerase
- 10X PCR Reaction Buffer with MgCl2
- Magnesium Chloride, 25 mM Solution
  - None known.

**Specific hazards arising from the chemical**
- In a fire or if heated, a pressure increase will occur and the container may burst.
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- In a fire or if heated, a pressure increase will occur and the container may burst.
Section 5. Fire-fighting measures

Hazardous thermal decomposition products: HotStart-IT® FideliTaq™ DNA Polymerase
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- halogenated compounds
- metal oxide/oxides

10X PCR Reaction Buffer with MgCl2
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- halogenated compounds
- metal oxide/oxides

Magnesium Chloride, 25 mM Solution
No specific data.

Special protective actions for fire-fighters:
HotStart-IT® FideliTaq™ DNA Polymerase
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 PCR Reaction Buffer with MgCl2
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.

Magnesium Chloride, 25 mM Solution
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:
HotStart-IT® FideliTaq™ DNA Polymerase
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

10X PCR Reaction Buffer with MgCl2
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Magnesium Chloride, 25 mM Solution
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

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
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. Put on appropriate personal protective equipment.

For emergency responders:
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".

Environmental precautions:
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).

Methods and materials for containment and cleaning up
Section 6. Accidental release measures

Small spill: 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.

Large spill: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: 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: 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.

Conditions for safe storage, including any incompatibilities: 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.
Section 7. Handling and storage

MgCl₂ 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.

Magnesium Chloride, 25 mM Solution

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HotStart-IT® FideliTaq™ DNA Polymerase</td>
</tr>
<tr>
<td>glycerol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure limits</th>
</tr>
</thead>
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<tr>
<td>OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td>TWA: 10 mg/m³ 8 hours. Form: Total dust</td>
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<tr>
<td>OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td>TWA: 15 mg/m³ 8 hours. Form: Total dust</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Environmental exposure controls

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

: 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.

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.
Section 8. Exposure controls/personal protection

**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**: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

**Physical state**
- HotStart-IT® FideliTaq™ DNA Polymerase: Not available.
- 10X PCR Reaction Buffer with MgCl2: Not available.
- Magnesium Chloride, 25 mM Solution: Not available.

**Color**
- HotStart-IT® FideliTaq™ DNA Polymerase: Not applicable.
- 10X PCR Reaction Buffer with MgCl2: Not applicable.
- Magnesium Chloride, 25 mM Solution: Not applicable.

**Odor**
- HotStart-IT® FideliTaq™ DNA Polymerase: Not available.
- 10X PCR Reaction Buffer with MgCl2: Not available.
- Magnesium Chloride, 25 mM Solution: Not available.

**Flash point**
- HotStart-IT® FideliTaq™ DNA Polymerase: Not available.
- 10X PCR Reaction Buffer with MgCl2: Not available.
- Magnesium Chloride, 25 mM Solution: Not available.

**Auto-ignition temperature**
- HotStart-IT® FideliTaq™ DNA Polymerase: Not available.
- 10X PCR Reaction Buffer with MgCl2: Not available.
- Magnesium Chloride, 25 mM Solution: Not available.

**Flammable limits**
- HotStart-IT® FideliTaq™ DNA Polymerase: Not available.
- 10X PCR Reaction Buffer with MgCl2: Not available.
- Magnesium Chloride, 25 mM Solution: Not available.

**Molecular weight**
- HotStart-IT® FideliTaq™ DNA Polymerase: Not applicable.
- 10X PCR Reaction Buffer with MgCl2: Not applicable.
- Magnesium Chloride, 25 mM Solution: Not applicable.
### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
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<tbody>
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</table>
### Section 9. Physical and chemical properties

<table>
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### Section 10. Stability and reactivity

<table>
<thead>
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<th>Reactivity</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X PCR Reaction Buffer with MgCl2</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td></td>
<td>Magnesium Chloride, 25 mM Solution</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical stability</th>
<th>HotStart-IT® FideliTaq™ DNA Polymerase</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X PCR Reaction Buffer with MgCl2</td>
<td>The product is stable.</td>
</tr>
<tr>
<td></td>
<td>Magnesium Chloride, 25 mM Solution</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Possibility of hazardous reactions</th>
<th>HotStart-IT® FideliTaq™ DNA Polymerase</th>
<th>Under normal conditions of storage and use, hazardous reactions will not occur.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X PCR Reaction Buffer with MgCl2</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td></td>
<td>Magnesium Chloride, 25 mM Solution</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conditions to avoid</th>
<th>HotStart-IT® FideliTaq™ DNA Polymerase</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X PCR Reaction Buffer with MgCl2</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Magnesium Chloride, 25 mM Solution</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incompatible materials</th>
<th>HotStart-IT® FideliTaq™ DNA Polymerase</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10X PCR Reaction Buffer with MgCl2</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Magnesium Chloride, 25 mM Solution</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>
### Section 10. Stability and reactivity

**Hazardous decomposition products**
- HotStart-IT® FideliTaq™ DNA Polymerase
- 10X PCR Reaction Buffer with MgCl2
- Magnesium Chloride, 25 mM Solution

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

### Section 11. Toxicological information

#### 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>HotStart-IT® FideliTaq™ DNA Polymerase</td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>21900 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>10X PCR Reaction Buffer with MgCl2</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2600 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**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>HotStart-IT® FideliTaq™ DNA Polymerase</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>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>potassium chloride</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>potassium chloride</td>
<td>Eyes - 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)**
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X PCR Reaction Buffer with MgCl2</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 the likely routes of exposure
Not available.

Potential acute health effects

Eye contact

Inhalation

Skin contact

Ingestion

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

Inhalation

Skin contact

Ingestion

Delayed and immediate effects and also 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

Potential delayed effects

Potential chronic health effects
Not available.

General
Carcinogenicity
Mutagenicity
Teratogenicity
Developmental effects
Fertility effects

Numerical measures of toxicity
Acute toxicity estimates
### Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HotStart-IT® FideliTaq™ DNA Polymerase Oral</td>
<td>176347.2 mg/kg</td>
</tr>
<tr>
<td>10X PCR Reaction Buffer with MgCl2 Oral</td>
<td>69751.8 mg/kg</td>
</tr>
</tbody>
</table>

### Section 12. Ecological information

#### Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>HotStart-IT® FideliTaq™ DNA Polymerase potassium chloride</td>
<td>Acute EC50 1337000 µg/l Fresh water</td>
<td>Algae - Navicula seminulum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 9.24 g/L Fresh water</td>
<td>Algae - Desmodesmus subspicatus</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 83000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 9.68 mg/l Fresh water</td>
<td>Crustaceans - Pseudosida ramosa - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 880000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td>10X PCR Reaction Buffer with MgCl2 potassium chloride</td>
<td>Acute EC50 1337000 µg/l Fresh water</td>
<td>Algae - Navicula seminulum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 9.24 g/L Fresh water</td>
<td>Algae - Desmodesmus subspicatus</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 83000 µg/l Fresh water</td>
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<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 9.68 mg/l Fresh water</td>
<td>Crustaceans - Pseudosida ramosa - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 880000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

#### Persistence and degradability

Not available.

#### 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>HotStart-IT® FideliTaq™ DNA Polymerase glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

#### Mobility in soil

<table>
<thead>
<tr>
<th>Soil/water partition coefficient (K&lt;sub&gt;oc&lt;/sub&gt;)</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>HotStart-IT® FideliTaq™ DNA Polymerase</td>
<td>Not available.</td>
</tr>
<tr>
<td>10X PCR Reaction Buffer with MgCl2</td>
<td>Not available.</td>
</tr>
<tr>
<td>Magnesium Chloride, 25 mM Solution</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 12. Ecological information

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

Section 13. Disposal considerations

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. 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

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) PAIR: Poly(oxy-1,2-ethanediyl), α-[4-(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-; Poly(oxy-1,2-ethanediyl), α-[4-(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 311: edetic acid
## Section 15. Regulatory information

### 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

### SARA 302/304

#### Composition/information on ingredients
No products were found.

#### SARA 304 RQ
- Not applicable.

#### SARA 311/312
- Not applicable.

#### 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><strong>HotStart-IT® FideliTaq™ DNA Polymerase</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium chloride</td>
<td>1 - 10</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td><strong>10X PCR Reaction Buffer with MgCl2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>potassium chloride</td>
<td>1 - 10</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>2-amino-2-(hydroxymethyl)propane-1, 3-diol hydrochloride</td>
<td>1 - 10</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

### State regulations

#### 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

**WARNING:** This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

### Ingredient name

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HotStart-IT® FideliTaq™ DNA Polymerase</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), α-[4-(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), α-[4-(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>
Section 15. Regulatory information

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 Inform Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Canada

WHMIS (Canada) : HotStart-IT® FideliTaq™ DNA Polymerase Not controlled under WHMIS (Canada).
10X PCR Reaction Buffer with MgCl2 Not controlled under WHMIS (Canada).
Magnesium Chloride, 25 mM Solution Not controlled under WHMIS (Canada).

Canadian lists

Canadian NPRI : None of the components are listed.
CEPA Toxic substances : None of the components are listed.
Canada inventory : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health
Flammability
Physical hazards

The customer is responsible for determining the PPE code for this material.

History

Date of issue/Date of revision : 06/14/2016.
Date of previous issue : No previous validation.
Version : 1
Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Key to abbreviations:

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- UN = United Nations

Indicates information that has changed from previously issued version.